Operating manual
- Englisch -

USW 30

UFO®*compact* software

Version 4.0

KATHREIN
Antennen · Electronic

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1. Introduction

The USW 30 software is a PC program for (remote) configuration of one or more UFO®*compact* headend systems. For this purpose, a UFO®*compact* system is a unit comprising one UFO®*compact* controller, a demultiplexer and the channel units controlled by it. The software is implemented in JAVA and therefore is available on many different operating systems. The user interface is easy to use and allows the user to set all the parameters for a UFO®*compact* headend system. Communication between the PC software and the UFO®*compact* system(s) can be performed directly via a serial connection (RS232, USB) or Ethernet, depending on which demultiplexer is used. In addition the system can also be connected to the PC using an AT modem over a phone line.

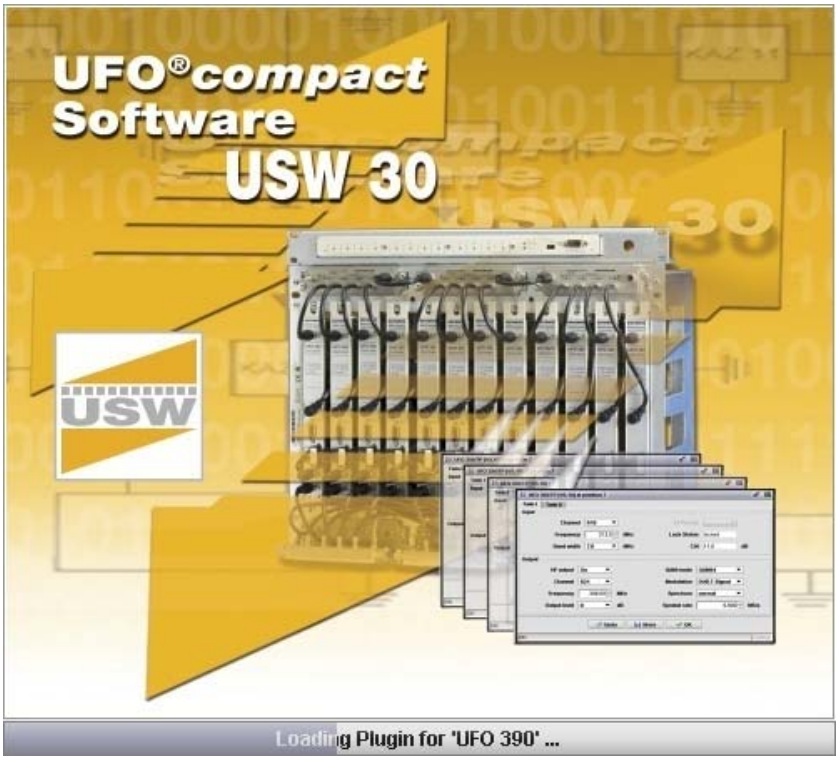


Fig. 1.1: Starting the application

2. Conventions in this documentation

This is normal continuous text, in which a large part of the user manual for the application is written.

Important instructions are shown like this.

Warnings are formatted like this.

Expert instructions, not generally relevant for normal use are shown like this.

The text output of a command, contents of a file etc. are shown within the continuous text like these words and are shown as a block like this:

```
#!/bin/bash

# Example of a small shell script

echo “Hello, world! “

exit 0
```

3. Preconditions

3.1 Hardware

Minimum requirements:

- Hardware
  - 400 MHz clock frequency
  - 320 MB RAM
  - 90 MB of available hard disk space
  - Graphics card at least (resolution: 1,280 x 900) pixels

- Software
  - Operating system: Microsoft Windows 2000/XP/Vista/7, Linux
  - Java Runtime Environment (JRE): Version 1.6.0 or higher

3.2 Interfaces

The PC can be connected to the UFO®*compact* system using the following interfaces:

- Serial interface (RS232, with only UFX 312 or direct connection to the channel unit)
- USB (with UFX 314 only)
- analogue modem
- ISDN modem
- GSM modem
- Ethernet TCP/IP network (directly with UFX 314 or indirectly with UFX 312 (e.g. using an n-port server))

3.3 Java VM

For correct operation of the program a Java Virtual Machine (JVM), version 1.6.0 or higher is necessary. Version 1.6.0 is installed as standard in the “jre” sub-directory of the installation path.

3. Preconditions

3.4 Direct connection of the PC to a channel unit

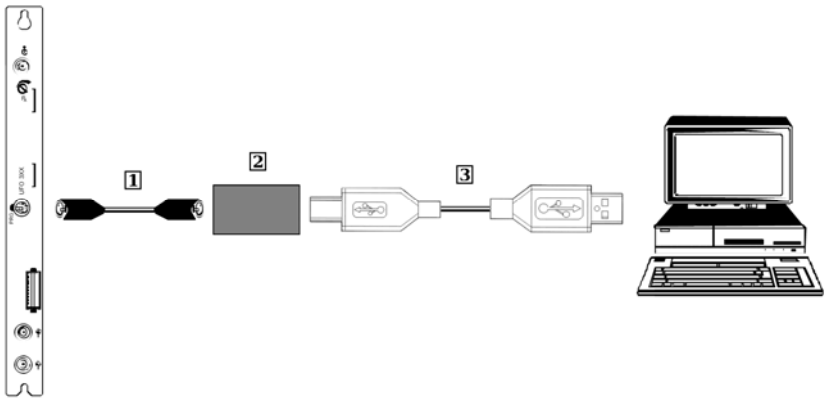


Abb. 3.1: Direct connection of the PC to a channel unit

To connect the PC directly to a channel unit, you require the following cables and adapter:

1. Connection cable with two 6-pin mini-DIN plugs,
2. USB adapter with 6-pin mini-DIN socket and USB socket (type B),
3. USB cable from plug type B (for USB adapter) to plug type A (for PC).

The adapter kit (cables and adapter) is available only from authorised Kathrein sales centres or from ESC GmbH in Grassau.

Note: *A driver is required for the USB adapter. This must already be installed on the PC when the adapter is first used. The driver and a comprehensive installation guide are available from the Kathrein homepage http://www.kathrein.de in the download area for the UFO®compact system.*

3.5 Used ports/addresses

The following ports/addresses are used for communication with the UFX 314.

Communication via TCP/IP:
Address: IP of the respective UFX 314, port: 9312

Communication via UDP (Multicast):
Address: 224.0.224.0, port: 9314

Communication via UDP (Multicast):
Address: 224.0.0.251, port: 5353

4. Installation

4.1 Windows

Start the program "*usw30_<version_number>.exe*" in the Windows directory on the USW 30 CD and follow the instructions in the installation program. Enter a destination directory into which all the files required for the program start should be copied, e.g. "C:\Program Files\USW30". You can choose whether you wish to place a link in the Start menu and an icon on the Desktop. After you have confirmed your input, please wait until all files have been copied to the destination directory.
Exit the installation by pressing the "Finish" button.

4.2 Linux

Important:	Never install the software under Unix in the *root* directory, unless absolutely necessary. A user *root* can put at risk the security of your computer system. At no time during the installation of the USW 30 are *root* rights required. If ant any time you do require *root* user rights, for instance to change the access rights in a directory, please log out of *root* before starting to install the USW 30.

Start the program "*usw30_Linux_<version_number>.sh*" in the Linux directory on the USW 30-CD and follow the further instructions in the installations program.
Enter a destination directory into which all the files required for the program start can be copied. Ensure that you have the necessary rights in the destination directory.
Under Linux no icon can currently be generated on the Desktop or in the Start menu. You will need to create this yourself in accordance with the user guide for your distribution. You have however the option during the installation of creating a symbolic link, which you can place on your desktop.

5. Starting the system software

Note:	*If you are operating the UFO®compact system directly, i.e. using a null modem cable, USB cable or via an Ethernet network, be sure to disconnect the manual controller. Leaving the controller plugged in can lead to unpredictable behaviour by the USW 30.*

Important:	**Only when using the UFX 312 demultiplexer:** When operating your UFO®*compact* system via a modem connection, leave the controller plugged in, and connect the modem via the controller. For technical reasons the controller is currently essential for modem operation.

5.1 Windows

Start the USW 30 software either from the start menu via (Program Files | Kathrein | USW 30) or start the program directly by clicking on the “USW30” icon on the Desktop.

5.2 Linux

Start the USW 30 software by clicking on the symbolic pointer generated during installation, or from within the chosen installation directory by entering the command:
./usw30

6. Elements of the user interface

This chapter gives an overview of the structure of the user interface for the USW 30. All elements in the menu and the symbol bar are briefly introduced.

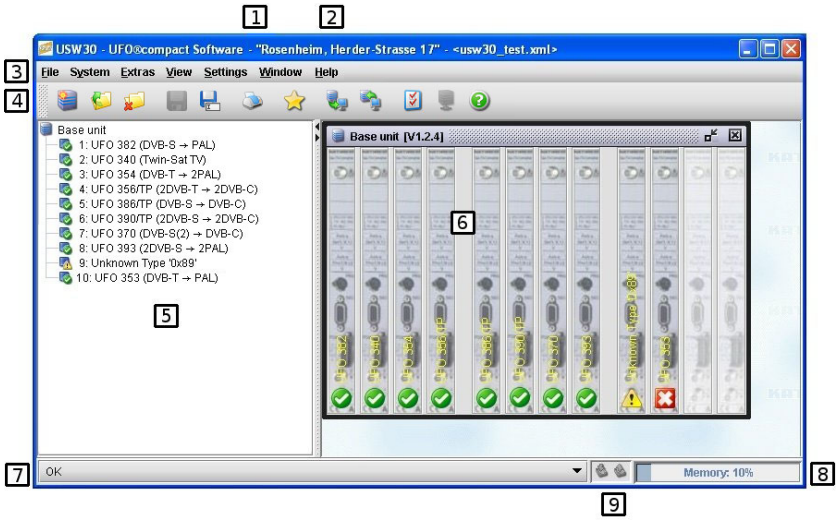


Fig. 6.1: Main window for the application

Structure of the user interface:

1. The version number is shown in the header of the application window.

2. If the USW30 is connected to an UFO®*compact* system which is equipped with UFX 314 demultiplexers, the comment for the system will be shown in inverted commas. Refer to Chapter 7.8 System networking for more detailed information. The name of the current file follows in angle brackets. If no file is loaded or the system being read has not yet been saved to a file, no name will be shown at this point.

3. The menu bar for the application. The individual menu entries are explained in the following tables.

4. The symbol bar for the application. The individual symbols are explained in more detail in the following tables.

5. The navigation tree contains the base unit and all extension units, each with its channel units. The tree allows rapid navigation. Clicking with the right mouse key brings up a context menu.

6. In the right hand part of the application window is displayed a graphical representation of the base unit and extension units. Clicking the display of the channel unit with the right mouse key brings up a context menu. For this see Chapter 9. Templates for UFO®*compact* system configurations.

7. Messages regarding the operations currently being performed, such as warnings, appear in the status bar for the application. Left click on the status bar to view earlier messages.

8. This display bar shows the current memory usage of the application. Hold the mouse cursor over this surface element, and after a short interval a tool tip will appear, which specifies the memory usage in more precise figures.

6. Elements of the user interface

9. These two symbols allow representation of the communication to the UFO®*compact* system. Data traffic incoming to the PC is indicated by the left hand symbol briefly lighting up. Data being transmitted to the UFO®*compact* system is indicated by the right hand symbol briefly lighting up.

6. Elements of the user interface

The following descriptions apply to the various symbols in the navigation tree and in the graphics displays for the channel units:

Navigation	Graphics	Description
		The unit or channel unit is present and functioning with no faults.
		The channel unit has been added manually, see Chapter 9. Instructions for UFO®*compact* system configurations.
		No plug-in for this channel unit could be found. An update of your software may provide a remedy, see Chapter 11. Software Update.
		An error occurred when reading or communicating with the channel unit. See “Possible errors when establishing a connection” in Chapter 8. UFO®*compact* system read out, configure and send.

The application contains the following menu entries and symbols:

Symbol	Menu	Short cut	Description
	File | Open system	Ctrl O	For loading an existing system configuration.
	File | Import system	Ctrl I	For importing an existing system configuration into the current system configuration. For further information see Chapter 8. UFO®*compact* system read out, configure and send.
	File | Save	Ctrl S	For saving the system configuration that has been created or changed.
	File | Save as…	Ctrl Shift S	For saving a system configuration under a different file name.
	File | Close	Ctrl W	The current system configuration will be closed. If the configuration has not yet been saved, you will be invited to save it before it is closed.
	File | Export as PDF…	Ctrl E	The current system configuration will be exported as a PDF file.
	File | Print …	Ctrl P	For printing the system configuration.
	File | 1 ...		List of the files used most recently. Select one of these files to open it immediately.
	File | End	Ctrl Q	To end the application
	System | Read out system	Ctrl R	Starts to read the configuration of a real UFO®*compact* system. For further information see Chapter 8. UFO®*compact* system read out, configure and send.
	System | Send system	Ctrl T	Sends the current configuration to a real UFO®*compact* system. For further information see Chapter 8. UFO®*compact* system read out, configure and send.
	System | Select from the Favourites	Ctrl-F	Selection of the system to be read from a list of favourites.
	System | Add the current system to the	Ctrl-A	Adds the system currently open to the Favourite list. (This option is available only for UFX 314-based connections)

6. Elements of the user interface

	Favourites		
	System | Create base unit System | Create extension unit	Ctrl N	Creates a new base or extension unit. For further information see Chapter 9. Templates for UFO® *compact* system configurations.
	Attachment		List of the most recently opened attachments. Select one of these attachments to read it immediately.
	Extras | NIT Wizard …	F3	Creates and activates the NIT. For further information see Chapter 10. Creating a NIT.
	Extras | Activate NIT		Activates the NIT.
	Extras | Deactivate NIT		Deactivates the NIT.
	View | Additional information in the navigation tree		Switches the display of the additional information tree on or off.
	Settings | Settings …		Configures the application. For further information see Chapter 7. Software configuration.
	Settings | Language		Configures the language for the application. For further information see Chapter 7. Software configuration.
	Settings | System networking	F2	Configures the system networking (UFX 314 only). Refer to Chapter 7.8 System networking for more detailed information.
	Window | Minimize all	F9	All windows will be minimised.
	Window | Restore all	F5	All windows will be restored.
	Window | Close all windows	F4	All windows will be closed.
	Window | 1 …		List of windows (max. 10). Select a window to appear in the foreground.
	Window | all Windows…	F7	Shows the list of all windows.
	Help | Manual	F1	Shows the handbook.
	Help | Release Notes		Shows the version information (in English only).
	Help | Archive customer service information		Saves all information relevant to customer service in a file, see Chapter 12. Archiving customer service information.
	Help | About USW30…		Information about the application. Here you will find information regarding the version, the plug-ins, satellite lists and the open-source licences used.

7. Software configuration

In the menu (Settings | Basic Settings) general settings can be performed, which apply equally to all connected systems. Within the individual tabs a variety of settings can be performed.

7.1 Port settings

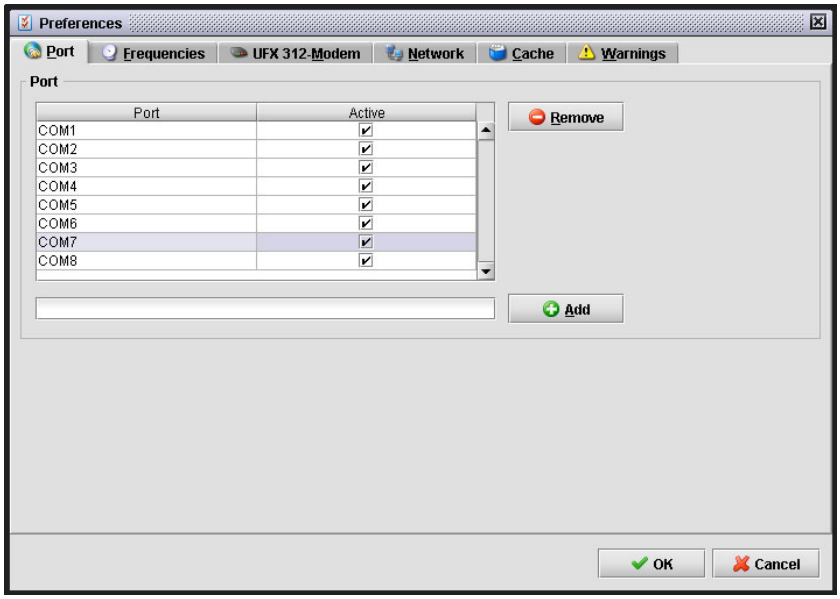


Fig. 7.1: Menu Settings | Basic Settings | Port

In the upper part of the dialog window the ports required for communication with the UFO®*compact* systems can be activated. Select the desired ports by checking the respective boxes. To delete an interface, select it with the left mouse button and press the "Delete" button.

Further ports can be added at the bottom of the list of ports. If the UFO®*compact* system is for instance connected to the COM9 port, insert **COM9** into the text field and click on the “Add” button. The new port will immediately be added to the list.

7. Software configuration

7.2 Frequency settings

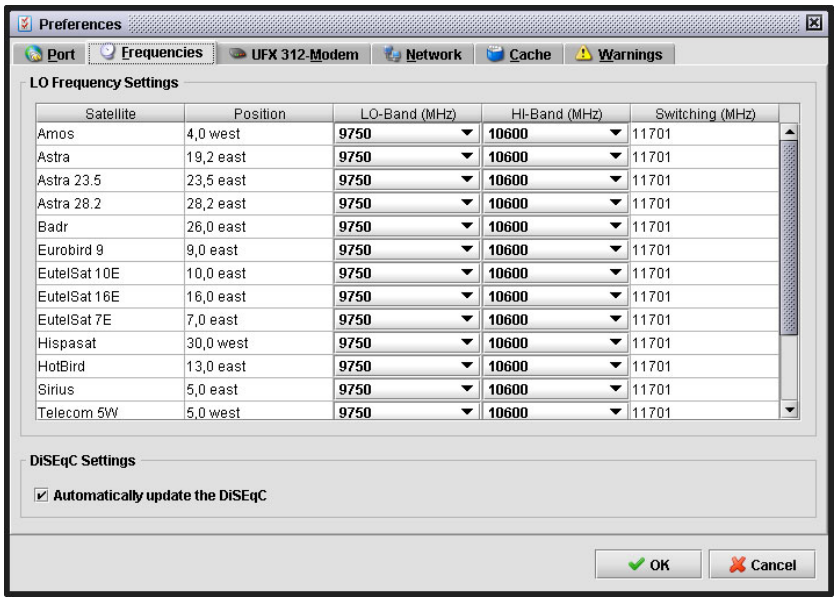


Fig. 7.2: Menu Settings | Basic Settings | Frequencies

The values for the LO frequency and the frequency for automatic changeover of the desired frequency band depend on your satellite system, in particular on the configuration of the LNB or satellite matrix. The frequencies can be configured independently for each satellite.

The switch in the DiSEqC™ settings determines whether in the event of a change to the input frequency necessitating that the DiSEqC™ signal in the individual channel units be switched over, this is performed automatically. If the check is not set, the DiSEqC™ signal in the channel unit window must be switched over manually.

7. Software configuration

7.3 Modem settings for UFX 312

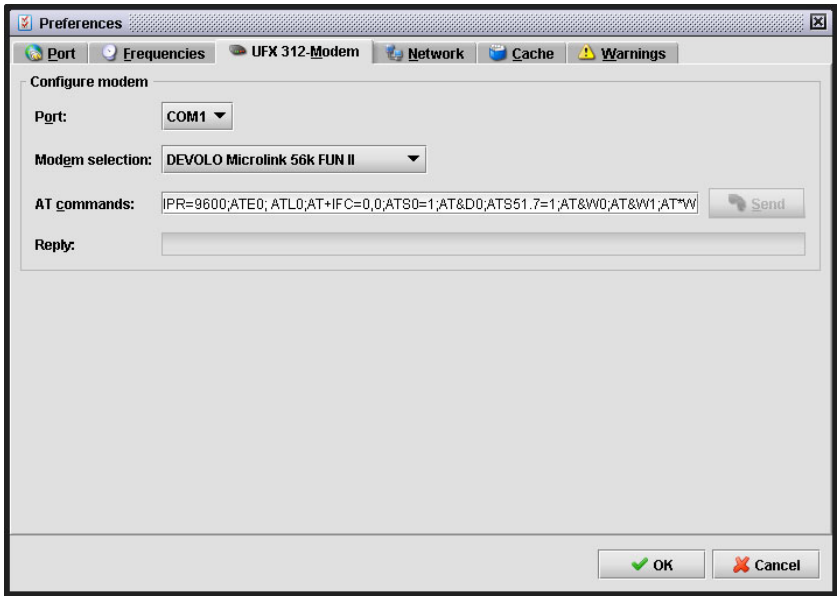


Fig. 7.3: Menu Settings | Basic Settings | UFX 312 Modem

Note: *It is recommended that the USW 30 and the UFO®compact system be connected only by modems of the same type, e.g. two analog modems. Mixed operation should generally be avoided.*

In this dialog window, AT commends can be sent to a modem. In this way a modem at the UFO®*compact* system end can be configured and operated.

Important: Incorrect initialisation of a modem can make it unusable for operation with a USW 30. It is recommended to use the initialisations preset in the USW 30.

A modem can be initialised as follows:

1. Connect the modem to the serial port.
2. Start USW 30.
3. Call up the modem using (Menu Settings | Basic Settings | UFX 312 Modem)
4. Under “Port” select the connection into which the modem is plugged.
5. Under “Modem selection”, pick out the desired modem or manually enter the desired AT commands in the “AT commands” line. When selecting a modem the recommended AT commands for the respective modem appear in this line. These values can be changed or extended as desired.
6. Briefly switch off power to the modem, so that any settings in the modem will be deleted.
7. The model start-up process lasts about 30 seconds. After this period, press the “Send” button.

8. Sometimes it may happen that the after the first attempt at configuration the modem shows an error in the “Reply” line. This error message varies from modem to modem. Press the “Send” button again.

9. Implement the configuration that is best for both modems (on the PC and at the UFO®*compact* system).

10. Now you can start up the modem at the UFO®*compact* system.

Note: *A wrongly initialised modem can be the reason for failure to establish a connection to the UFO®compact system. If possible, test the modems on a UFO®compact system in such as way that if necessary you can still make changes to the settings of the modems. When finally set up for use, changes to the modem settings can generally only be made with a great deal of trouble and after long preparation.*

A modem can however also be initialised without using the USW 30 program. To do this, please consult the manual for your modem. Below you will see a list of the settings required for operation with the USW 30:

7.3.1 General settings for the modem

Below you will see a list of some basic settings:

- Install the driver for the modem
- Set the Baud rate to 9600 bits/s
- Set the automatic cal answering to the value 1 (ATSO=1)
- Set the effect of DTR to “no effect” (AT&D0)
- Set the effect of RTS to “no effect” (AT/Q0)
- Set the data flow control (RTS and CTS) for the serial port to “no data flow control” (depending on the selected modem)
- Set the connection rate to 9600 Baud (depending on the selected modem)
- Set for tone dialling **(not pulse dialling)**
- Save the configuration profile (AT&W0)

Note: *The settings of the modem vary widely depending on the respective manufacturer. Please make a careful study of the necessary settings.*

The list of recommended modems is given in Chapter 8.1.3 Connections via Modem to UFX 312. Other modems are operated at the user's own risk. We would like to point out that Kathrein-Werke KG is unable to provide support in the case of problems encountered with modems not specified in the list.

7. Software configuration

7.3.2 Settings for an analogue 3Com US Robotics Modem - Sportster Flash

The following settings are necessary:

- Install the driver for the modem
- Set the Baud rate to 9600 bits/s
- Set the automatic cal answering to the value 1 (ATSO=1)
- Set the effect of DTR to “no effect” (AT&D0)
- Set the data flow control for the serial port to “no data flow control” (AT&R1)
- Set the connection rate to 9600 Baud (AT&N6 and AT&U6)
- Set tone dialling (ATT)
- Save the configuration profile (AT&W0 and AT&W1)

7.3.3 Settings for the analogue Devolo (formerly Elsa) modem - MicroLink 56k Fun II

The following settings are necessary:

- Install the driver for the modem
- Set the Baud rate to 9600 bits/s
- Set the automatic cal answering to the value 1 (ATSO=1)
- Set the effect of DTR to “no effect” (AT&D0)
- Set the data flow control for the serial port to “no data flow control” (AT+IFC=0.0)
- Set the connection rate to 9600 Baud (AT+IPR=9600 and ATS51.7=1)
- Save the configuration profile (AT&W0 and AT&W1)

7.3.4 Settings for the analogue Devolo (formerly Elsa) modem - MicroLink ISDN i

The following settings are necessary:

- Install the driver for the modem
- Set the Baud rate to 9600 bits/s
- Set the automatic cal answering to the value 1 (ATSO=1)
- Set the effect of DTR to “no effect” (AT&D0)
- Set the data flow control for the serial port to “no data flow control” (AT/Q0)
- Set the connection rate to 9600 Baud (depending on the selected modem)
- Set for tone dialling **(not pulse dialling)**
- Save the configuration profile (AT&W0 and AT&W1)

7. Software configuration

7.3.5 Settings for the GSM Siemens modem - MC35

The following settings are necessary:

- Install the driver for the modem
- Set the Baud rate to 9600 bits/s
- Set the automatic cal answering to the value 1 (ATS0=1)
- Set the effect of DTR to “no effect” (AT&D0)
- Set the data flow control for the serial port to “no data flow control” (AT\Q0)
- Set the connection rate to 9600 Baud (AT+IPR=9600)
- Deactivate the PIN query permanently (AT+CLCK="SC",0,9999)
- Save the configuration profile (AT&W0)

Note: *The USW30 modem configuration requires the modem to be set to a transfer rate of 9600 baud. If, despite several attempts, it is not possible to configure the GSM modem, you can adjust the baud rate using a terminal program. For example, start the program "HyperTerminal" under Windows. 115200 baud must be selected in the connection settings. After sending the command "AT+IPR=9600" (modem confirms with "OK"), you must close the terminal program and continue configuration using the USW30.*

7.4 Network settings

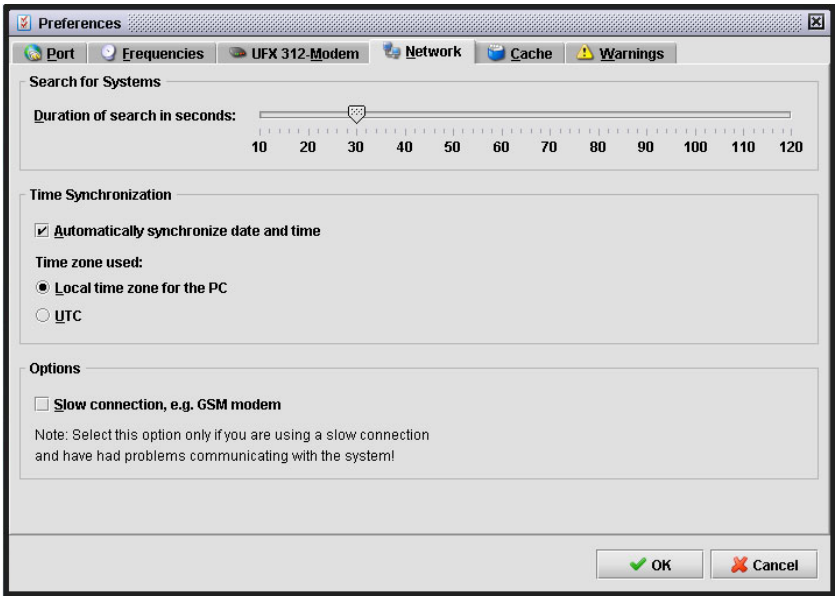


Figure 7.4: Menu Settings | Basic Settings | Network

Under this tab you can adjust the settings for the network connection. This only affects UFO®*compact* systems which are equipped with the UFX 314 demultiplexer. In the top part of the dialog window, you can adjust the duration of the automatic system search. Values between 10 and 120 seconds are possible.

Time synchronisation settings can be performed in the centre part of the dialog window. When automatic synchronisation is in operation, the current date and time information are shown in the background whilst a UFO®*compact* system is being read in. There exists also the option of performing the time synchronisation manually, for this see Chapter 7.8.4 Current System. The time zone used id identical in both

cases and can be specified in this dialog window. There exist also the options of using the time zone currently in use on the PC, or the UTC coordinated world time.

In the case of slow connections, there is an appropriate option in the bottom part of the dialog window. This affects the timeout times for communication. Please only select the option if you use a slow connection (e.g. via a GSM modem) and are experiencing communication problems.

7.5 Cache

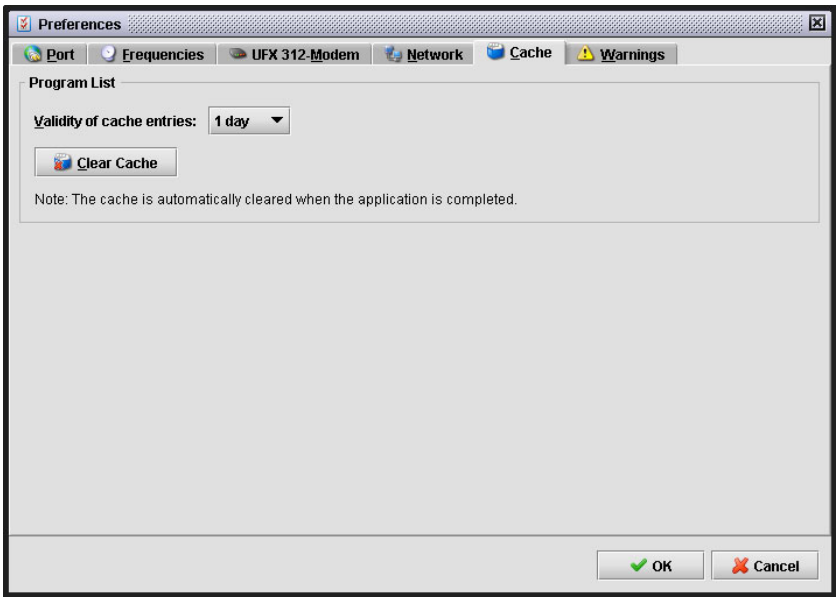


Figure 7.5: Menu Settings | Settings | Cache

In this tab you can perform settings for the transcoder-channel unit. When the channel list for a transponder or DVB-T channel is being read in by a transcoder channel unit, this channel list can be saved in the background. If this or another transcoder should read in the channel list for the same transponder (or DVB-T channel), the saved channel list is used instead. When using the same transponder (or DVB-T channel) successively, this can significantly reduce the waiting times.

Since the channel list of a transponder can change, it makes sense to rewrite the information saved in the background from time to time. This interval can be configured by setting the validity period of the cache entries.

There exists also the option of clearing down the cache immediately. This is particularly useful if you know that the channel list for a transponder has changed. If you are unsure whether a channel list is still current, clear down the transcoder cache and read in the transponder afresh.
On quitting the application, the cache for the transcoder channel units is cleared down automatically.

7.6 Warnings

7. Software configuration

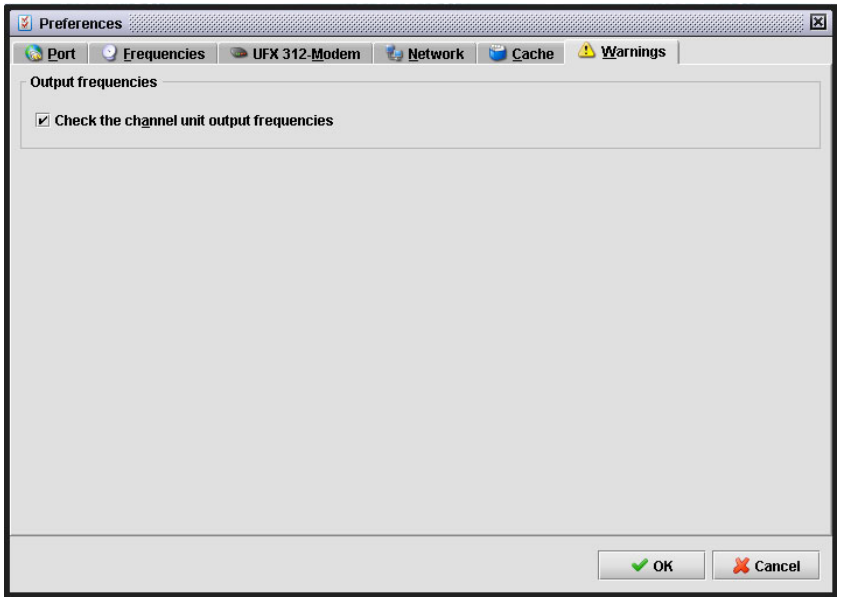


Figure 7.6: Menu Settings | Settings | Warnings

This tab allows the displays of various warnings to be enabled /disabled. Such as warning can be displayed for instance if conflicts occur between the channel unit output frequencies (i.e. the output spectra clash).

7.7 Language

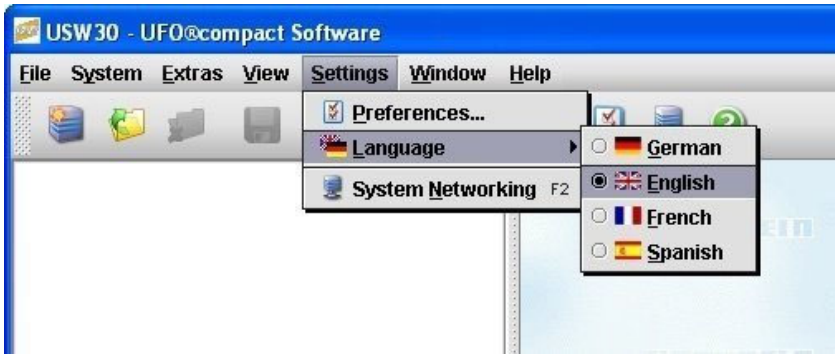


Figure 7.7: Menu Settings | Language

In the menu (Settings | Language) the choice can be made between German, English, French and Spanish. The newly selected language only becomes effective the next time the application is restarted.

7. Software configuration

7.8 System networking

The menu (Settings | System Networking) is used to open the dialog window for configuring the networking of the UFO®*compact* system. Please note that only units equipped with UFX 314 demultiplexers can be configured here. The networking of units with UFX 312 demultiplexers is determined by means of cascading using serial cables and cannot be influenced by the USW30.

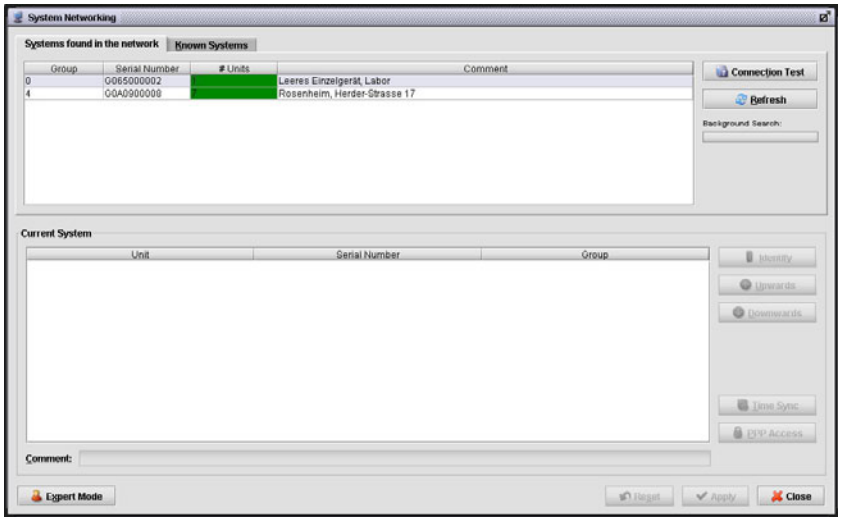


Fig. 7.8: Dialog window for system networking where systems have been found in network

7. Software configuration

7.8.1 Groups

UFO®*compact* systems with UFX 314 demultiplexers are organised into "groups". If there are several demultiplexers in a network, it is not possible to physically separate them from each other within the network, i.e. all of the demultiplexers are interconnected. In order to assign demultiplexers to separate systems, the devices concerned are put into a common group.

Note: *The assignment of demultiplexers to groups does not reflect the physical network structure.*

When supplied, all devices are assigned to group 0. A total of 256 groups are supported (0 to 255). Each group can contain a maximum of 15 devices. If more than 15 devices are assigned to a group, the stability of the system may be impaired (see Chapter 8.1.8.3 Too many demultiplexers found).

7.8.2 Systems found in network

The systems found in the network are shown in the top part of the dialog window (Fig. 7.8). Opening the dialog window starts a network search and the systems found are listed in the top table. The progress bar on the right-hand side shows the time so far taken for the search.

Connection test:
Pressing this button starts a connection test. This tests whether a connection can be established via TCP/IP. This is the preferred type of connection and operates even through routers and firewalls. If no TCP/IP connection can be established, a further test will be performed to discover whether a UDP connection can be established. The USW30 can also use ADP to communicate to a system, but there exist certain restrictions in respect of routers and firewalls. If only the UDP connection can be established, it is recommended that the network configuration of the system is set to enable a TCP/IP connection.

New search:
You can restart the search in the network at any time by clicking this button.

The group, serial number, number of units and the comment are shown for each system found. (Refer to Chapter 7.8.4 Current system for more detailed information on comments.) In Expert mode (see Chapter 7.8.5 Expert mode) the IP address is also displayed. In the column showing the number of units, green indicates that the maximum supported number has not been exceeded. If the maximum number of 15 units is exceeded, the field is coloured red.

Double-clicking a row in the table using the left-hand mouse key opens the corresponding system. This system is then displayed in the bottom part of the dialog window (see Chapter 7.8.4 Current system).

The search for systems in the network may not find all of your systems. This is especially the case if the systems are connected to the network via routers and/or firewalls. When the network search is performed, the USW30 sends special messages ("broadcast packages") which, however, are blocked by most routers and firewalls.

7. Software configuration

Note:	*Please ask your network administrator whether routers or firewalls are used in your network. If they are, it should be checked whether it is technically possible to forward the broadcasts and whether this is desirable from a network communication viewpoint.*

If a system cannot be found by means of a network search, it is possible to enter the IP address manually in Expert mode (see Chapter 7.8.5 Expert mode).

7.8.3 Known systems

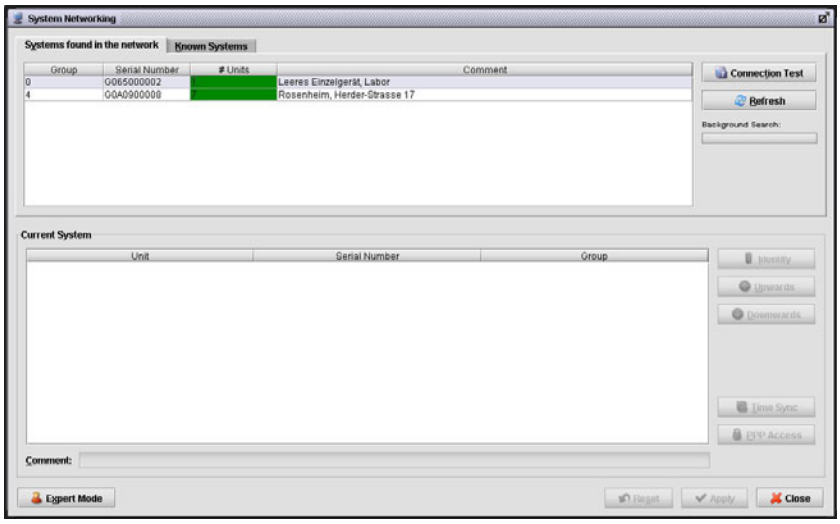


Fig. 7.9: Dialog window for system networking with known systems

In addition to the systems found in the network, the list of already known systems can be displayed by selecting the second tab. Known systems are systems that have already been opened at least once before. The list of known systems is stored when the application is closed so that it is available again when the application is restarted. A maximum of 10 known systems are stored.

Remove:
This button is used to remove a system from the list of known systems, e.g. if the system is no longer valid.

The serial number, group and comment are shown for every known system. (See the following chapter for details on comments.) In Expert mode (see Chapter 7.8.5 Expert mode) the IP address is also displayed. Double-clicking a row in the table using the left-hand mouse key opens the corresponding system. This system is then displayed in the bottom part of the dialog window.

7.8.4 Current system

In the bottom part of the dialog window for system networking, you can configure a specific system. Apart from the name of the unit, its serial number and group are also displayed. The group can be changed in the range from 0 to 255. In Expert mode (see Chapter 7.8.5 Expert mode) the network mode, IP address, network mask and gateway are also shown.
The comment relates to the entire system. Here, for example, you can indicate where the system is installed. The comment is displayed in the connection dialog window and in the title bar of the application when a system is connected.

7. Software configuration

Identification:
Clicking this button identifies a particular unit. The unit begins to flash at all 12 port LEDs. The LEDs stop flashing automatically after approx. 10 seconds.

Upwards:
This button is used to move a unit upwards. In this way you can adapt the sequence of the units to the actual local conditions.

Downwards:
Clicking this button moves the selected unit downwards. In this way you can adapt the sequence of the units to the actual local conditions.

Time Sync:
Pressing this button initiates manual time synchronisation. The time zone used for this is determined by the prevailing settings, see Chapter 7.4 Network settings.

PPP access:
By pressing this button opens the dialog window for configuring PPP access.

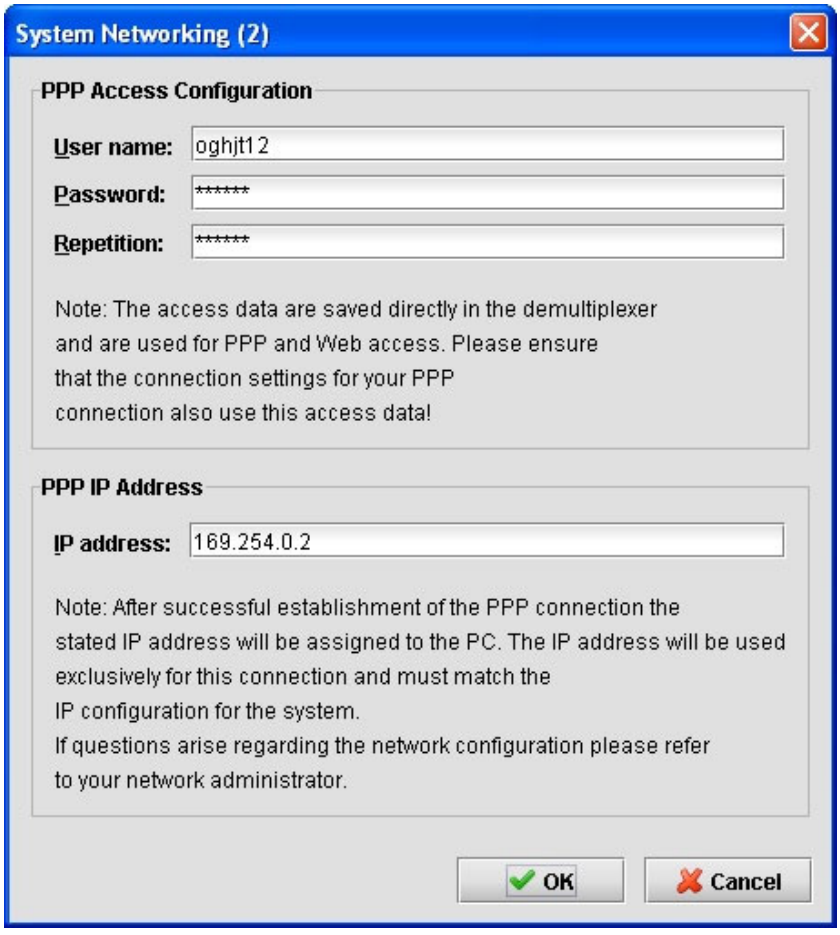

System Networking (2)
PPP Access Configuration
User name:
oghjt12
Password:
******
Repetition:
******
Note: The access data are saved directly in the demultiplexer and are used for PPP and Web access. Please ensure that the connection settings for your PPP connection also use this access data!
PPP IP Address
IP address:
169.254.0.2
Note: After successful establishment of the PPP connection the stated IP address will be assigned to the PC. The IP address will be used exclusively for this connection and must match the IP configuration for the system.
If questions arise regarding the network configuration please refer to your network administrator.
OK
Cancel

Fig. 7.10: Dialog window for PPP configuration

The PPP access data can be changed in the top part of the dialog window. PPP stands for "Point-to-Point Protocol" and describes the connection protocol used for modem access. More detailed information on configuring the modem can be found in the manual for the UFX 314 demultiplexer.

Important:	The access data is saved directly in the demultiplexer. Please make sure that this access data is also used in the connection settings for your PPP connection. It will otherwise not be possible to establish a modem connection to the UFX 314.

Note:	*Apart from PPP, the access data is also used for browser access to the UFX 314 via HTTP (web). For more detailed information on web access, refer to the manual for the UFX 314 demultiplexer.*

In the bottom part of the dialog window, you can change the IP address that is assigned to the PC after a PPP connection is set up. This IP address is used for the PPP connection only and must match the IP configuration of the UFO®compact system. Furthermore, this IP address must not already be used by a different network adapter of your computer.

If the IP configuration of the system is in the ex-factory state (i.e. Zeroconf is used), it is usually unnecessary to change the preset IP address for PPP.

Note:	*If you have questions concerning network configuration, please consult your network administrator.*

There are another three buttons at the bottom right of the dialog window for system networking:

Reset:
All changes are rejected. The data is read out from the system again.

Load:
The changes are transferred to the system and saved there. The system may need to be restarted. This happens automatically. A dialog window appears stating that the system is to be restarted and the connection to the system is closed.

Close:
The dialog window is closed. If required, the changes can first be transferred to the system and saved there.

7.8.5 Expert mode

Expert mode:
This button is used to switch the Expert mode on and off. With the Expert mode switched on, all of the IP configuration settings are visible. The IP address or the computer name is displayed both in the tab showing the found systems and in the tab showing the known systems. The IP address of a system or the computer name, and also the port can be added manually below the table of found systems. The network mode, IP address, network mask and gateway are also displayed in the table for the current system.

7. Software configuration

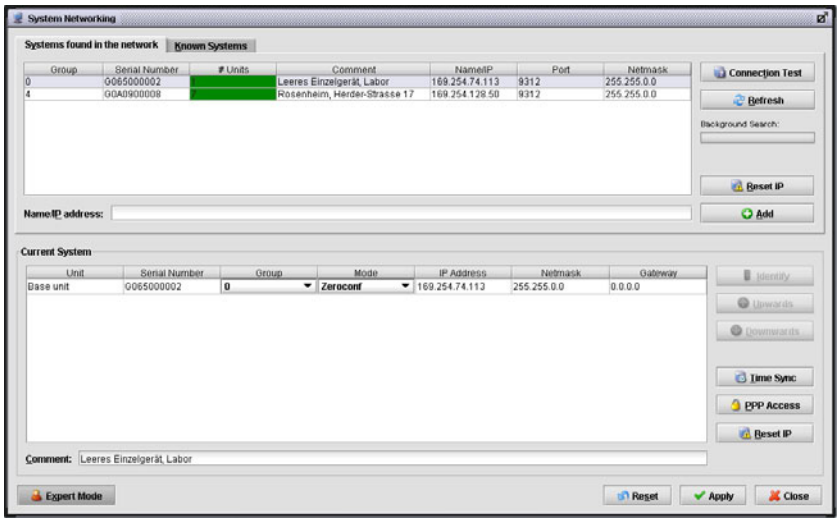


Fig. 7.11: Dialog window for system networking in Expert mode

resetting the IP:
Pressing this button resets the IP settings for all the demultiplexers in the selected or the current system to the factory default settings. In the upper part of the dialog, i.e. in the tabs "Systems found in the network" and "Known systems", a connection for resetting the system is established, and the factory default settings are immediately generated. Then the system reboots automatically, so that the new settings can take effect. In the lower part of the dialog, i.e. the part showing the current system, the reset values for the mode, the IP address, the network screen and the gateway are simply changed in the table. The settings are not loaded to the system until the user saves these values, for instance by pressing the "Load" button. This also then initiates a reboot of the system.

The following factory default settings are regenerated:

- Mode: Zeroconf
- IP address: "0.0.0.0" (given by Zeroconf on reboot)
- Network screen: "0.0.0.0" (given by "255.255.0.0")
- Gateway: "0.0.0.0"

Add:
If you click this button, the IP address / computer name (including the port if required) entered in the text field to the left of the button is transferred to the table of found systems. In this way you can add systems which are not found when the network is searched.

If a non-standard TCP/IP port is used, the IP address and the port should be separated by a colon. For example: „169.254.13.115:9800“. This may be necessary if there are several systems installed behind a firewall with port forwarding. If the standard port is used, entering the IP address is sufficient.

The following settings are possible for the network mode of a unit:

- Zeroconf: The Zeroconf protocol is used for selecting the IP address. An IP address ranging from 169.254.1.0 to 169.254.254.255 is selected automatically. The network mask is always "255.255.0.0". The gateway can be edited if necessary.
- DHCP: If a DHCP server is used in the network, an IP address can be obtained from this server. The network mask and the gateway are also determined by the DHCP and cannot be changed.

- Manual: The IP address, network mask and gateway can be freely changed.

Note:	*Have your network administrator check the planned network configuration or have the administrator make the necessary settings. Apart from the network configuration for the UFO® compact system, it is also necessary to adapt the network settings of your computer. If your computer is not in the same IP address range as the UFO® compact system and the IP configuration of your computer has been changed (static IP address or DHCD), the IP settings must be adapted (e.g. by adding data to a route). If the system or computer is incorrectly configured, it may not be possible to establish a connection later.*

8. UFO®*compact* system read out, configure and send

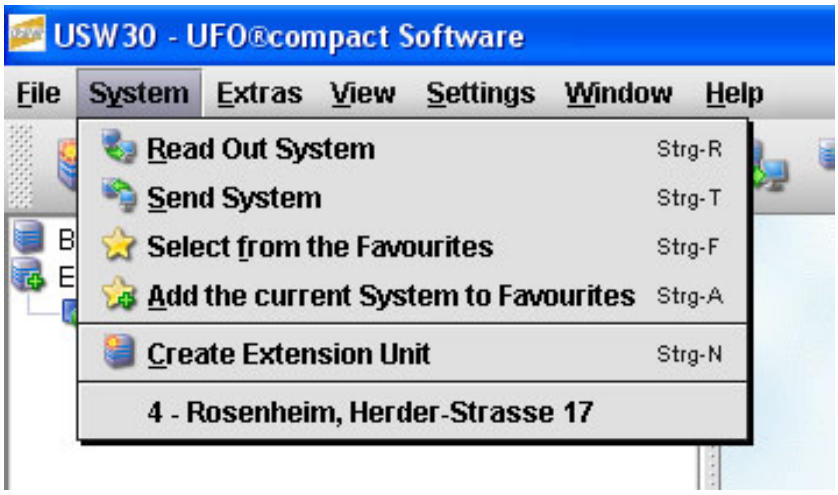


Figure 8.1: Menu System

8.1 Reading the system

A connection to a UFO®*compact* system can be established by the menu item (System | Read out system) or by clicking of the respective symbol in the symbol bar. The following dialog appears:

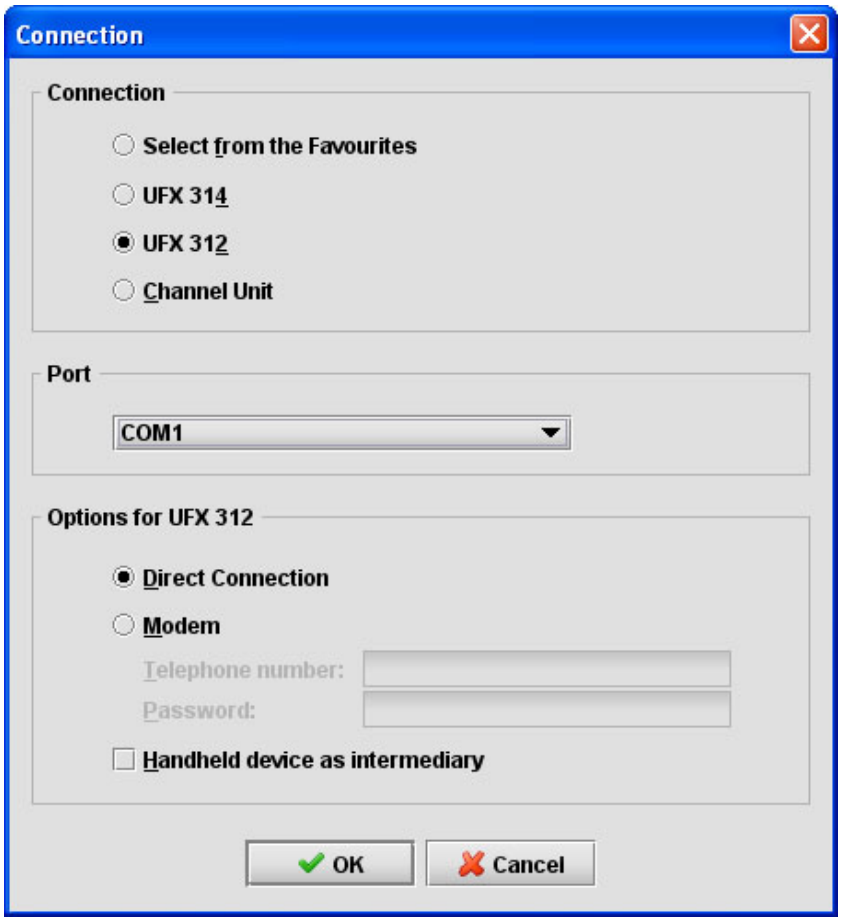


Figure 8.2: Settings for establishing a connection

In this dialog window you must first select the type of connection. Connections to the UFX 314 or UFX 312 demultiplexer are possible. If you use the UFX 312, you can select the serial port and, if a modem is

used, enter the telephone number and password. A direct connection from the PC to the channel unit can also be established. Please note that the USW30 Light Edition supports only direct connection to a single channel unit.

8.1.1 Connections via serial port (COM, only UFX 312)

This connection is from a serial port of your computer via a null modem cable (Rxd-Txd crossed over) to the V24 port on the UFO®*compact* system. Now you can read in the connected UFO®*compact* system using the menu item (System | Read out system). The following connection parameters are used for the serial port:

Baud rate 9600, 8, N, 1.

Important:	Do not connect a PC to a UFO®*compact* system unless the system has been equipotentially bonded! In this connection refer to the user manual for the base unit of your UFO®*compact* system.

Note:	*If you are installing under Linux and Solaris, check that you have the rights to use the port. We recommend that under Windows you log in as "Admin".*

8.1.2 Connections via serial port (USB, only UFX 314)

Using a USB cable, connect a USB port of your computer to the USB port on the demultiplexer of the UFO®*compact* system. Please refer to the manual of the UFX 314 demultiplexer for information on how to set up the USB connection on your PC.

The UFX 314 uses "Ethernet over USB", i.e. the USB connection is treated like a standard TCP/IP network connection. For further information on establishing a network connection, refer to Chapter 8.1.6. Direct connection via Ethernet (UFX 314 only).

8.1.3 Connection via modem to UFX 312

In this way a connection is established from the V24 port on the UFO®*compact* controller to the corresponding port on the AT modem. Like the direct cable connection, this method also allows several systems to be controlled. Now select the menu item (System | Read out system). The following dialog appears:

8. UFO®*compact* system read out, configure and send

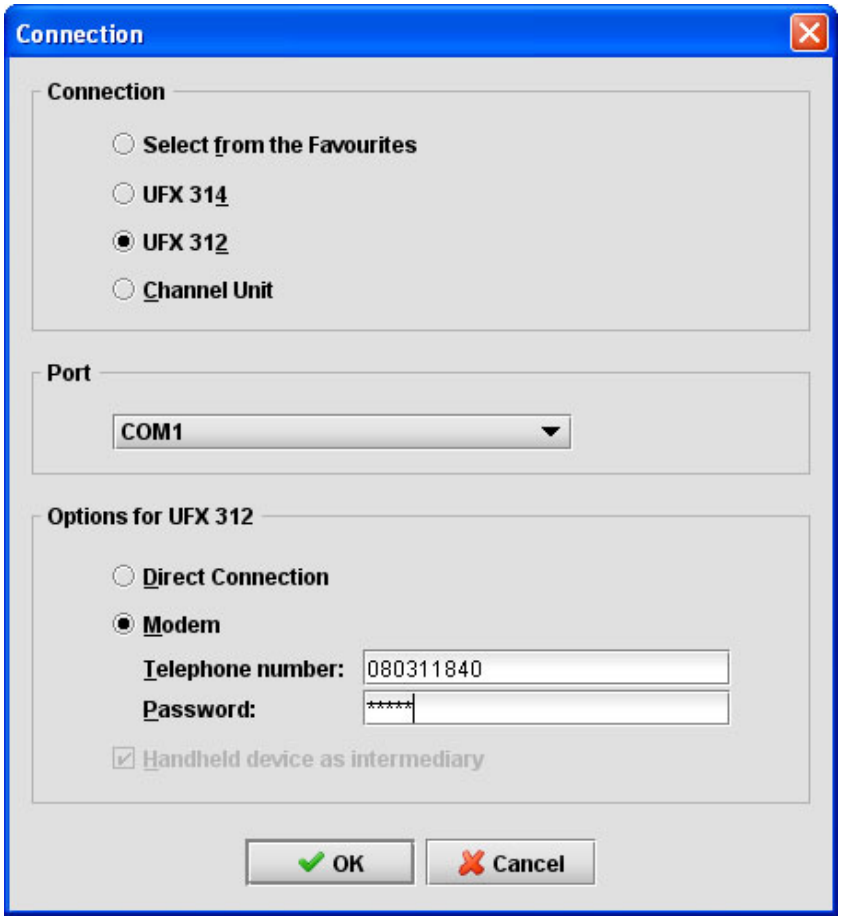


Figure 8.3: Settings for connection to UFX 312 via modem

After selecting the port to which the modem is to be connected, enter the phone number for the modem and the respective password. The password is a four-digit code.

Providing the password entered is correct, the UFO®*compact* system that was dialled up is displayed. If the password entered was correct, the connection is aborted and a dialog is displayed.

If the demultiplexer is operated with an integrated manual controller, the appropriate option must be selected. This affects the transmission speed which is selected by the USW30.

Note:

The UFO®compact controller operates via the V24 port at 9600 Baud. The receiving modem connected to this port must be configured for the same Baud rate (automatic Baud rate detection may not necessarily function correctly), otherwise there is risk the no connection will be established. Save this configuration in the modem, so that in the event of a power failure and restoration it will automatically be reloaded.

The following analogue modems are recommended

- "3Com US Robotics - Sportster Flash"
  "Devolo (formerly Elsa) - MicroLink 56k Fun II"

The following ISDN modem is recommended
"Devolo (formerly Elsa) - MicroLink ISDN i"

The following GSM modem is recommended
"Siemens MC35"

See Chapter 7. Software configuration for further information on modem settings and modem initialisation.

8.1.4 Connections via modem to UFX 314

Please refer to the manual of the UFX 314 demultiplexer for information on how to set up the modem on your PC. This manual also has a list of all supported modems. Configuration of the modem in the UFO®*compact* system is performed automatically if one of the recommended modems is used.

The modem connection to the UFX 314 uses the "Point-to-Point Protocol" (PPP) which is treated like a standard TCP/IP network connection. For further information on establishing a network connection, refer to Chapter 8.1.6. Direct connection via Ethernet (UFX 314 only).

Note: *Please make sure that the modem connection has been established before calling up the connection dialog window of the USW30. The modem connection is not disconnected automatically when the UFO®compact system in the USW30 is closed. You must disconnect the modem connection manually. For more detailed information on establishing and disconnecting the modem connection, refer to the manual for the UFX 314 demultiplexer.*

8.1.5 Connections via Ethernet (via n-port server, UFX 312 only)

By using an "n-port server", virtual serial connections can be established via an Ethernet-LAN. The n-port server has n serial ports and one Ethernet connection for this purpose. By installing the relevant drivers on the computer with the USW 30 software the serial ports can be used over the LAN. To the computer these appear as genuine local ports and can be used as such. Serial data traffic is packaged into Ethernet frames and sent to the n-port server. This then distributes them from one of its serial ports. The mechanism operates bi-directionally. The n-port server itself is installed close to the UFO®*compact* systems. There a V-24 serial port on the server is connected to the controller of a UFO®*compact* system. The Ethernet port of the n-port server is connected to the LAN. The remainder of the procedure is the same as for the direct connection using the null modem cable, except that the port employed is a virtual port instead of a local serial port.

8.1.6 Direct connections via Ethernet (UFX 314 only)

The connection dialog window is opened via the menu (System | Read out system) or the appropriate symbol in the symbol bar (see Fig. 8.2). Select "UFX 314" and confirm your entry by clicking the "OK" button. The connection dialog window for the UFX 314 demultiplexer is now opened.

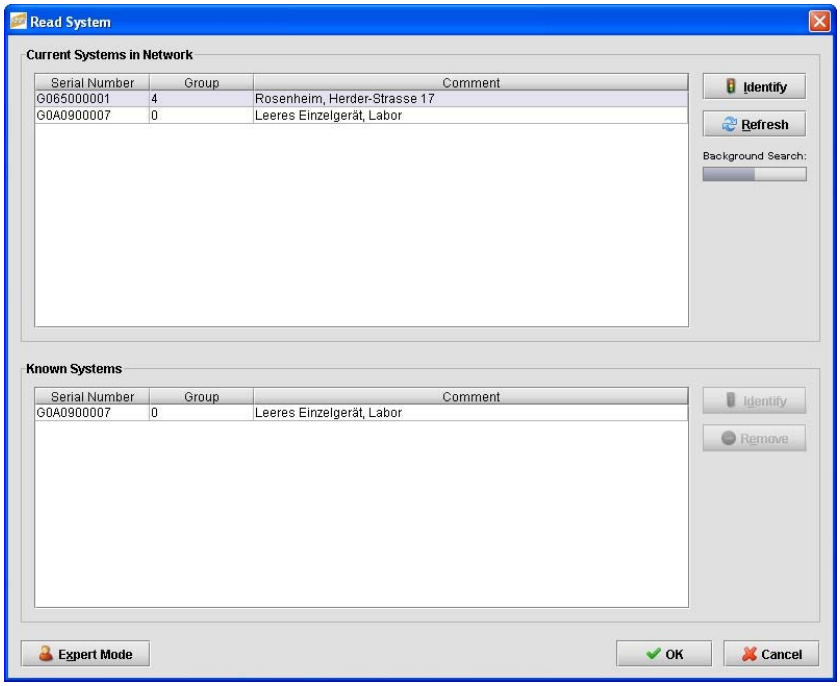


Fig. 8.4: Connection dialog window for UFX 314 demultiplexer

The systems found in the network are listed in the top half of the dialog window. Opening the dialog window starts a network search and the systems found are listed in the top table. The progress bar on the right-hand side shows the time so far taken for the search.

Identification:
Clicking this button identifies a system. A unit in the system begins to flash at all 12 port LEDs. The LEDs stop flashing automatically after approx. 10 seconds.

New search:
You can restart the search in the network at any time by clicking this button.

The serial number, group and comment are shown for every found system. (Refer to Chapter 7.8.4 Current system for more detailed information on comments.) In Expert mode the IP address is also displayed. Double-clicking a row in the table using the left-hand mouse key opens and reads in the corresponding system.

The search for systems in the network may not find all of your systems. Refer to Chapter 7.8.2 Systems found in network for more detailed information. If a UFO®compact system cannot be found by the automatic search, it is possible to enter the IP address or the computer name and the port manually in Expert mode.

Add:
If you click this button, the IP address / computer name (including the port if required) entered in the text field to the left of the button is transferred to the table of current systems in the network. In this way you can add systems which are not found when the network is searched.

If a non-standard TCP/IP port is used, the IP address and the port should be separated by a colon. For example: "169.254.13.115:9800". This may be necessary if there are several systems installed behind a firewall with port forwarding. If the standard port is used, entering the IP address is sufficient.

The list of already known systems is displayed in the bottom half of the dialog window. Known systems are systems that have already been opened at least once before. The list of known systems is stored when the application is closed so that it is available again when the application is restarted. A maximum of 10 known systems are stored.

Remove:
This button is used to remove a system from the list of known systems, e.g. if the system is no longer valid.

The serial number, group and comment are shown for every known system. (Refer to Chapter 7.8.4 Current system for more detailed information on comments.) In Expert mode the IP address is also displayed. Double-clicking a row in the table using the left-hand mouse key opens and reads in the corresponding system.

Expert mode:
This button is used to switch the Expert mode on and off. With the Expert mode switched on, the computer names and IP addresses of the systems are visible. The IP address of a system can be added manually below the table of current systems in the network.

Note: *All connections to UFX 314 demultiplexers are treated in the same way in the connection dialog window. Whether or not the connection is a real TCP/IP Ethernet connection, USB connection or PPP connection via a modem is irrelevant. The type of physical connection is clearly recognisable.*

8.1.7 Direct connection to a channel unit (without UFX 312/314)

You can select the serial interface to be used for the direct connection between the PC and a channel unit. The cable and adapter required, together with the connection layout, are described in Chapter 3.4 Direct connection between a PC and a channel unit.

8.1.8 Possible errors when setting up a connection and while connection is set up

8.1.8.1 Connections cannot be established

If a connection to real systems cannot be established, the following error dialog appears:

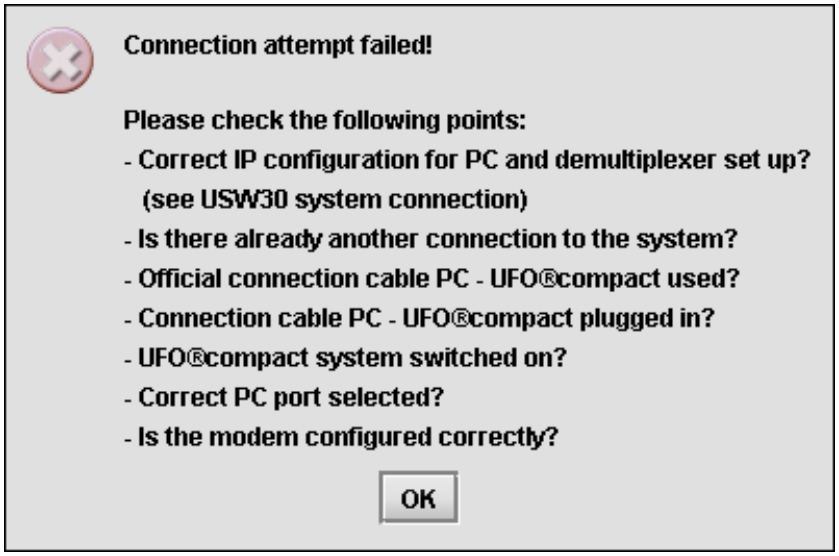

Connection attempt failed!
Please check the following points:
- Correct IP configuration for PC and demultiplexer set up?
(see USW30 system connection)
- Is there already another connection to the system?
- Official connection cable PC - UFO®compact used?
- Connection cable PC - UFO®compact plugged in?
- UFO®compact system switched on?
- Correct PC port selected?
- Is the modem configured correctly?
OK

Figure 8.5: Error dialog when reading the system

Check the following points and restart the application:

- Was the official connection cable (null modem cable) PC<-->UFO®*compact* system used (UFX 312 only)?
- Is the connection cable PC<-->UFO®*compact* system correctly plugged in?
- Is the UFO®*compact* system switched on? At least one LED must be lit up on the adapter.
- Was the correct port selected on the PC (UFX 312 only)?
- Have you made sure that the modem connection was accessed (UFX 314 only)?
- Has the network connection been configured correctly (IP address, network mask and, where applicable, gateway) (UFX 314 only)?
- Does there exist another connection to the system, for instance from another PC or from a manual controller (only for UFX 314)?
- Have the network routers and firewalls been configured correctly (activation of the required ports)?
- It is possible the modem connection was unexpectedly aborted!

8.1.8.2 Channel units are unavailable or not responding

If after a system configuration has been read, not all channel units that are fitted in the unit are present, note the following points:

- Make sure that you have loaded all the necessary plug-ins.
- Check the connection to your system. Are all the necessary connections plugged in?

8.1.8.3 Too many demultiplexers found

All UFX 314 demultiplexers are organised into groups (see Chapter 7.8 System networking). Each group can be assigned a maximum of 15 devices. If, when a system is read in, the current group contains more than 15 devices, the following error dialog window appears:

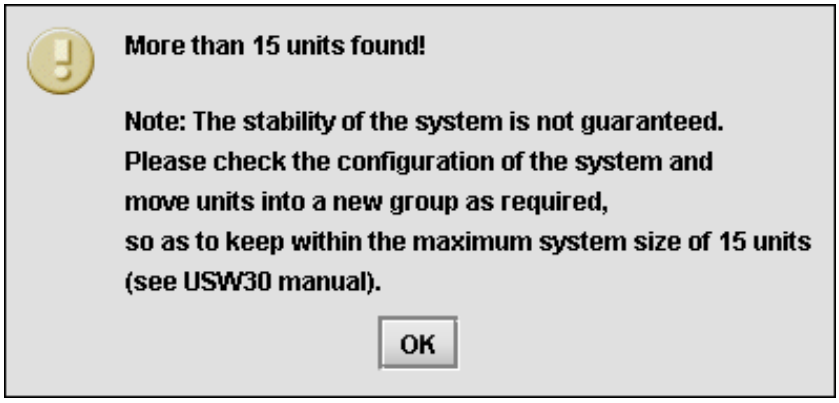

More than 15 units found!
Note: The stability of the system is not guaranteed.
Please check the configuration of the system and
move units into a new group as required,
so as to keep within the maximum system size of 15 units
(see USW30 manual).
OK

Fig. 8.6: Error dialog window with too many demultiplexers found

The stability of the system may be impaired. Please reconfigure the system in the dialog window for system networking. Move individual devices into different or new groups until all groups contain no more than 15 devices.

8.1.8.4 Connection interruption

A connection to a UFO®*compact* system that is equipped with UFX 314 demultiplexers is checked periodically to establish whether the connection has been interrupted by external influences. If this is the case, the following error dialog window appears:

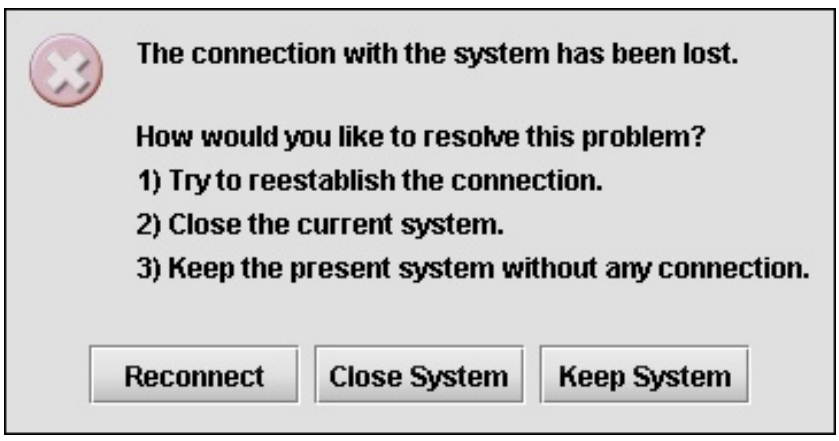

The connection with the system has been lost.
How would you like to resolve this problem?
1) Try to reestablish the connection.
2) Close the current system.
3) Keep the present system without any connection.
Reconnect
Close System
Keep System

Fig. 8.7: Error dialog window with connection interruption

A connection interruption may be caused by a number of different reasons, e.g.

- disconnection of the Ethernet connection (DSL disconnection, faulty network cable, failure of other network components, e.g. switch, router, firewall, etc.),
- temporary network overload,
- network connection with very low bandwidth, e.g. via GSM modem,
- disconnection of the USB cable,
- disconnection of the modem connection,
- local power failure (UFO®*compact* system, modem, network components, etc.).

Please check the connection as well as all cables and network components used. If you use a network connection with a very narrow bandwidth (e.g. via a GSM modem), please check the network settings (see Chapter 7.4 Network settings).

You now have the following selection options:

- Reconnect: An attempt is made to re-establish the connection to the system. If successful, the system is not read in again completely; you can continue working immediately. If the connection cannot be re-established, the current system is converted into a virtual system. You can save changes to a file and then transfer these changes to the system at a later time.
- Close system: The system is closed. Any changes made can be saved to a file.
- Stay with system: The current system is converted into a virtual system. You can then, for example, save any changes made to a file.

8. UFO®*compact* system read out, configure and send

8.2 Create channel units

8.2.1 General settings

By double clicking on a channel unit or by selecting the menu item “Channel unit characteristics” in the channel unit pop-up menu, open the channel unit characteristics window. If the channel unit is a twin unit, switch between the two configurations by clicking on the “Twin I” or “Twin II” tab at the top edge of the window.

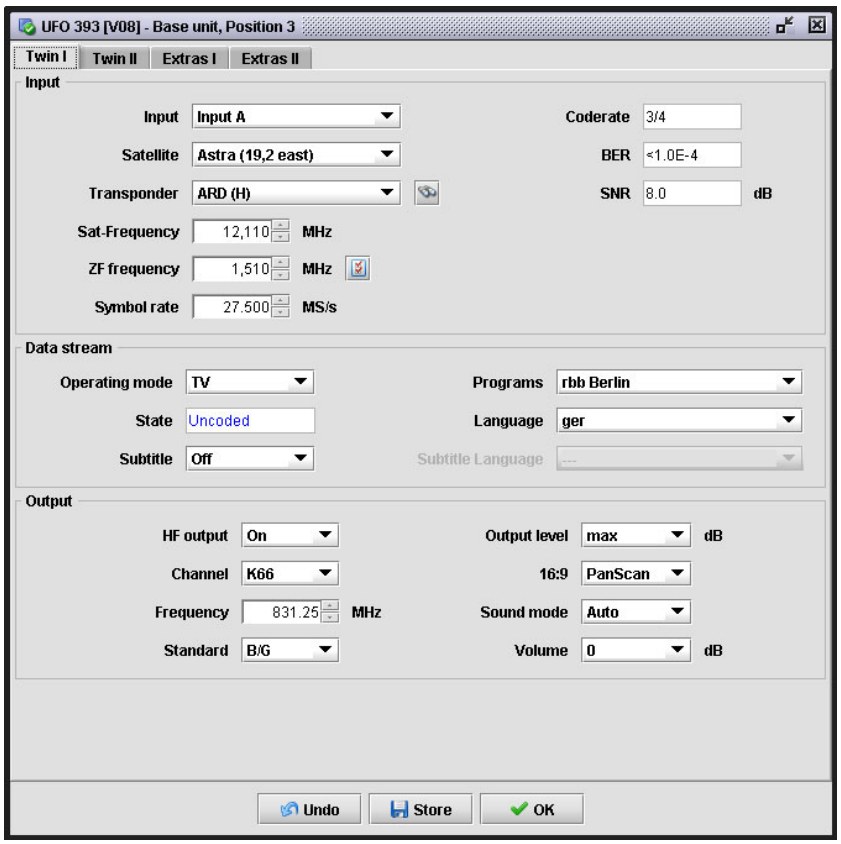


Figure 8.8: Creating a channel unit

All configurable parameters of a channel unit, such as input and output frequencies, can be set using the channel unit window. Non-configurable parameters (such as SNR, code rate), which represent continually varying status information regarding the channel unit, are read at intervals of about 1 second whilst the UFO®*compact* system is connected, and displayed in the channel unit window. If there is no UFO®*compact* system connected, no values can be displayed for these status parameters.

Changes made to parameters in the channel unit window can be immediately loaded to the UFO®*compact* system.

The concrete structure of the channel unit window depends on the type of unit. See the user manual for the respective channel unit for more information regarding the parameters of a channel unit. Each channel unit window has three standard buttons:

Undo:
The settings saved in the channel unit are read in again. Any changes in the channel unit window which had not been saved are lost.

Store:
The current settings are permanently loaded to the channel unit. The save operation may take a few seconds.

Note: *Changes to the parameters are loaded to the channel unit immediately, but are not permanently saved. In the event of a power failure these changes will be lost! Therefore when you have made changes always permanently save them by pressing the "Load" button before exiting the dialog window.*

OK:
The channel unit window is closed. Parameter changes which had not been saved are lost.

8.2.2 Programme filter

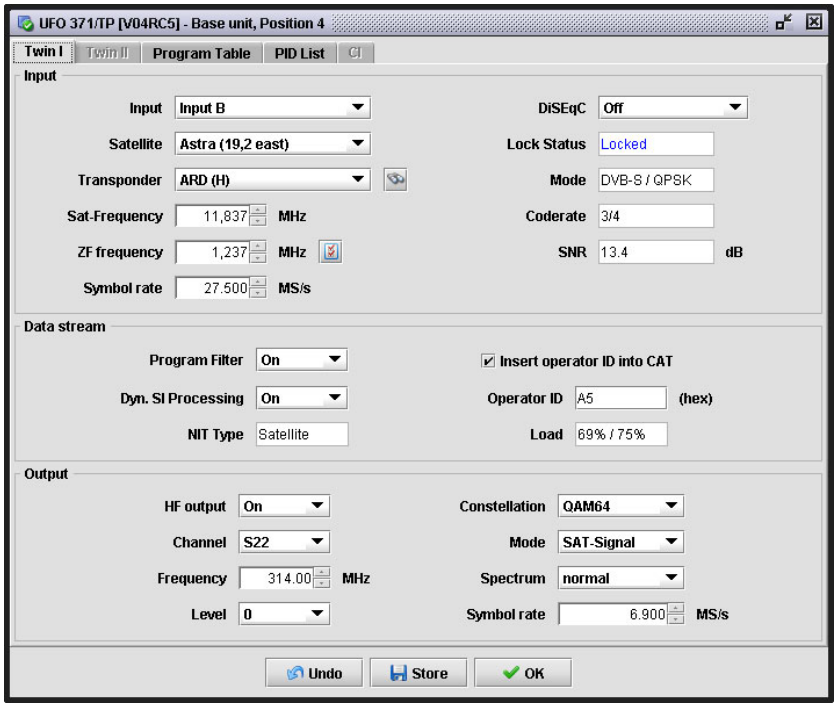


Figure 8.9: Channel unit with programme filter

Several UFO®*compact* transmodulator channel units support filtering of the transport stream. The filtering can be regulated by different parameters, by the programme table and the PID list. In general the filtering can be switched on and off. Special transmodulators such as the UFO 373/MX do not support this.

The CAT (Conditional Access Table) is generally taken from the satellite transport stream. In special cases, such as for the "KabelKiosk" provider, it may be necessary to substitute the CAT operator ID in the transport stream. The new value for the CAT Operator ID can be set manually, and is then inserted into the transport stream in place of the original ID.

"Dynamic SI Processing" monitors the transport stream and responds to changes in the programme data (Service Information Data / SI Data). The SI data may change for instance as a result of switching to another region. Normally the dynamic SI processing is switched on;

only in exceptional cases does it make sense to switch it off.

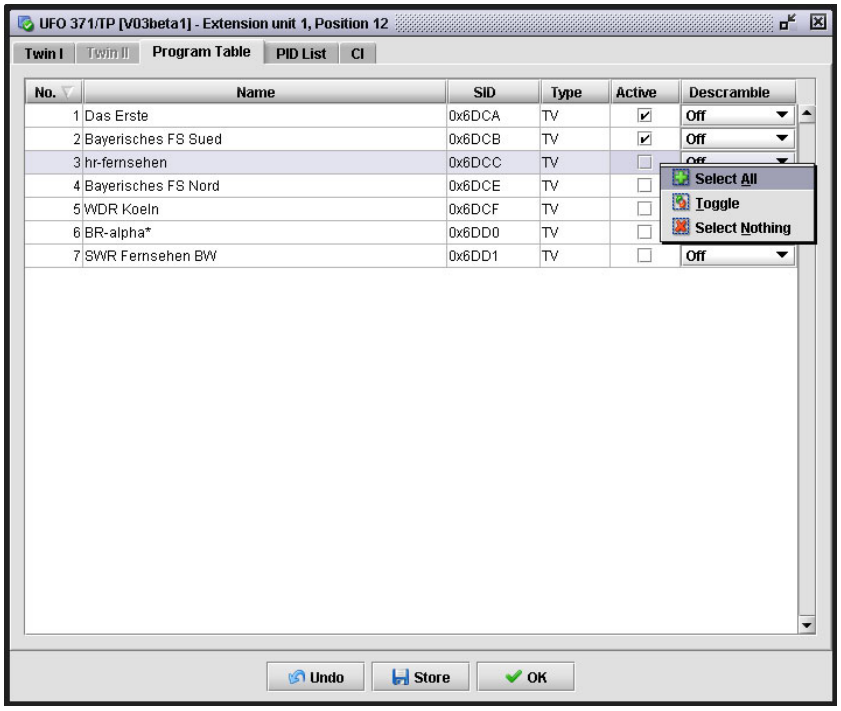


Figure 8.10: Programme table

The programme table contains all programmes (services) for a twin, or in the case of a multiplexer the programmes for both inputs. The table contains the service IDs and programme types in addition to the names of the programmes. The entry in the "Active" column for each programme specifies whether it should be included in the output transport stream. Please ensure that the maximum number of selected programmes is not exceeded (e.g. 20). This can vary depending on the type of channel unit.

The "Descremble" column is available only if the channel unit has the capability to be fitted with a CI retrofit kit such as UFZ 394. If no CI retrofit kit is detected, no selection can be made in the "Descremble" column; otherwise the CI slot to be used may be selected.

8.2.3 Programme filter

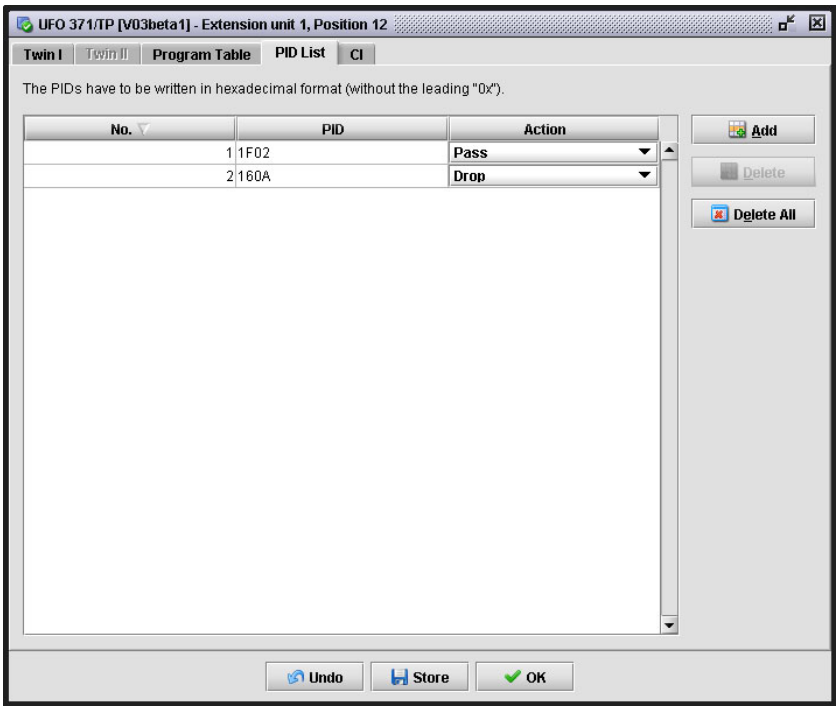


Figure 8.11: PID table

In the PID list, the package IDs (package IDs/PIDs) which are always allowed through by the filtering or are always blocked can be specified in addition to the programme table. The PID list is required only in exceptional cases. Please note that the maximum length of the PID list is limited (e.g. to 100 entries). The maximum length can vary depending on the type of channel unit and its firmware version.

8.2.4 Common Interface

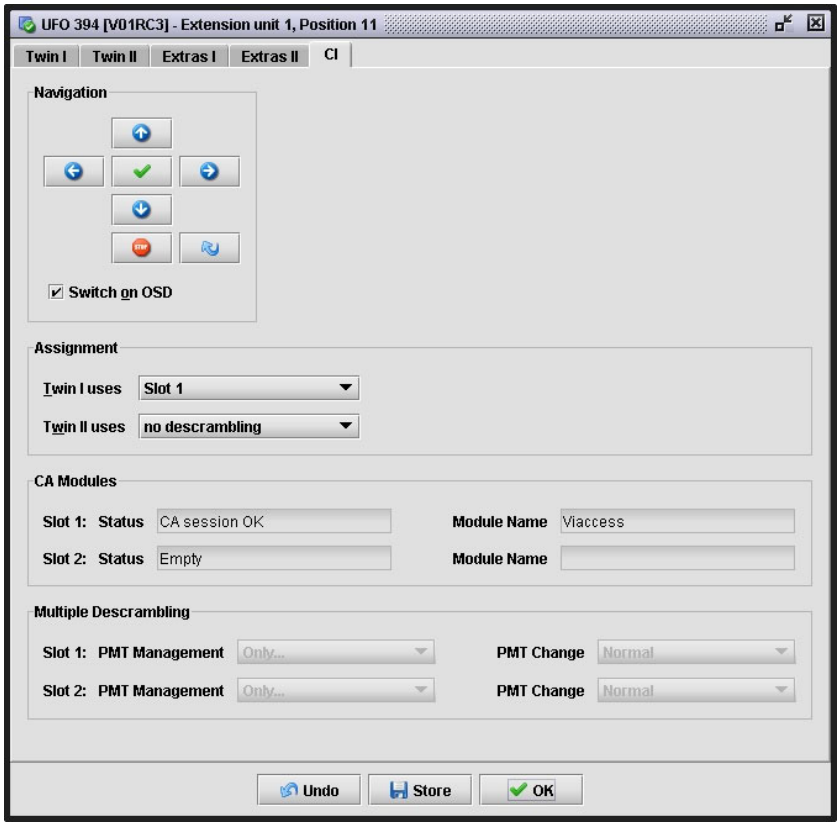


Figure 8.12: Common Interface Parameters

Several UFO®*compact* channel units support a CI retrofit kit such as the UFZ 394. The newer channel units (except UFO 353, UFO 382, UFO 383, UFO 384) offer the facility to change various of the Common Interface (CI) parameters.

If an On-Screen Display / OSD menu is supported, the menu can be navigated using the buttons in the "Navigation" section. Further information on the facilities available using the OSD can be found in the application instructions for the channel unit and the CI retrofit kit. Please note that for some channel units the tab can be changed so that the OSD switches on automatically, whilst for other channel units the OSD must be switched on manually.

If a CI retrofit kit uses several CI slots, the "Assignment" section can be used to assign for the transcoder channel units which slot is used for the respective twin. For transmodulator channel units this assignment is performed using the programme filter, see Chapter 8.2.2. Programme Filter.

Information on the Conditional Access modules that are used can be found in the "CA Modules" section. If multiple decoding is used, i.e. one CA module decodes several programmes concurrently, further settings can be performed in the last section. Please note that for transmodulator channel units these settings are always available, irrespective of the current programme table. The "PMT Management" parameter supports the modes "Only, Add, Add" and "First, More, More, Last". Please refer to the manual or the manufacturer of the CA module to determine the settings that should be performed here.
An optimised mode can also be used in addition to the normal mode during "PMT change". If the optimised mode is supported by the CA module and is set, fewer loss-of-picture events will occur during a

PMT change. Some malfunctions (such as black screen or loss of decoding on the other twin) may occur if optimised mode is selected despite not being supported by the CA module.

8.2.5 Search for programs and transponders

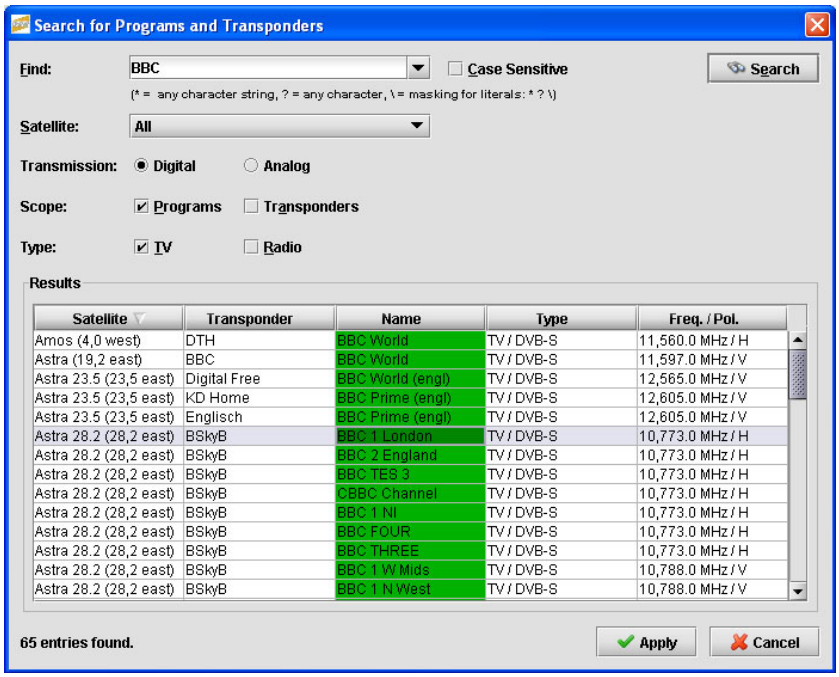

Search for Programs and Transponders
Find:
BBC
Case Sensitive
Search
(* = any character string, ? = any character, \ = masking for literals: * ? \)
Satellite:
All
Transmission:
Digital
Analog
Scope:
Programs
Transponders
Type:
TV
Radio
Results
Satellite
Transponder
Name
Type
Freq. / Pol.
Amos (4,0 west) DTH BBC World TV / DVB-S 11,560.0 MHz / H
Astra (19,2 east) BBC BBC World TV / DVB-S 11,597.0 MHz / V
Astra 23.5 (23,5 east) Digital Free BBC World (engl) TV / DVB-S 12,565.0 MHz / V
Astra 23.5 (23,5 east) KD Home BBC Prime (engl) TV / DVB-S 12,605.0 MHz / V
Astra 23.5 (23,5 east) Englisch BBC Prime (engl) TV / DVB-S 12,605.0 MHz / V
Astra 28.2 (28,2 east) BSkyB BBC 1 London TV / DVB-S 10,773.0 MHz / H
Astra 28.2 (28,2 east) BSkyB BBC 2 England TV / DVB-S 10,773.0 MHz / H
Astra 28.2 (28,2 east) BSkyB BBC TES 3 TV / DVB-S 10,773.0 MHz / H
Astra 28.2 (28,2 east) BSkyB CBBC Channel TV / DVB-S 10,773.0 MHz / H
Astra 28.2 (28,2 east) BSkyB BBC 1 NI TV / DVB-S 10,773.0 MHz / H
Astra 28.2 (28,2 east) BSkyB BBC FOUR TV / DVB-S 10,773.0 MHz / H
Astra 28.2 (28,2 east) BSkyB BBC THREE TV / DVB-S 10,773.0 MHz / H
Astra 28.2 (28,2 east) BSkyB BBC 1 W Mids TV / DVB-S 10,788.0 MHz / V
Astra 28.2 (28,2 east) BSkyB BBC 1 N West TV / DVB-S 10,788.0 MHz / V
65 entries found.
Apply
Cancel

Figure 8.13: Dialogue for the search for programs and transponders

Besides the direct selection of transponders or program using the selection boxes in the window of the channel unit, there is also the facility of searching for transponders and programs. The search text can be entered into the text field; it should comply with the following rules:

- An asterisk (*) stands for any character string. For example: If the search text "A*D" is entered, both "ARD" and also ASTRA HD" will be found.
- A question mark (?) stands for any single character. For example: If the search text "A*D" is entered, "ARD" will be found, but not "ASTRA HD".
- If the asterisk and question mark character should not be interpreted as wild cards, place a back slash (\) in front of them. In the same way, if a back slash itself is sought, this should be entered as "\\".
- If the search text does not contain an asterisk, an asterisk will always be prefixed to the text and the text appended to it (but only if no question mark is already occupying this position). For example: If the search text "BBC" is entered, "BBC World" and also "1Xtra BBC" and "RF1 BBC Hungary" will be found.

In addition the search can be further restricted by adding criteria:

- Case-sensitive differentiation,
- Selection of particular satellite,
- Transmission mode digital or analog,
- Search for programs and/or transponders,
- Search for TV and/or radio programmes or transponders.

The table in the lower half of the dialog contains all the programmes and transponders that were found. If a transponder or programme name is highlighted in green, that indicates a "hit". The number of entries found is shown at the left under the table.

Find:
The search is started using the current search parameters. The results are shown in the table.

OK:
The currently selected entry in the table is loaded into the channel window.

Abort:
The search dialog is closed without loading the data to the channel unit window.

8.3 Copy channel unit characteristics

The channel unit pup-up menu allows you to copy all the characteristics of a channel unit to the clipboard, and from there insert it into another channel unit. In this way channel units with similar characteristics can very quickly be configured. Copying and inserting channel unit characteristics can be performed within the USW30 and also across several instances of the USW30 running at the same time (provided they are the same version).

Characteristics can be copied only between compatible channel units. This includes identical, downwards- and upwards-compatible channel units (see Chapter 8.4). No parameters can be inserted into any other channel units.

8.4 Sending configuration to a system

A connection to a UFO®*compact* system can be established by the menu item (System | Send system) or by clicking of the respective symbol in the symbol bar.

The following criteria are necessary for sending:

- a real system must have been read *OR*
- an existing system configuration must have been opened *OR*
- a new system configuration must have been created.

Channel units cannot be loaded unless they match the real system. After channel unit data have been loaded, a dialog is displayed, which gives information about which channel units were successfully loaded and which not. If the channel units were incompatible, additional information is provided regarding the types of the channel unit to be loaded and the real existing channel unit (in that order).

If a downwards-compatible channel unit is found, this means that the actual system contains a channel unit with a newer hardware version than that in the USW30 system configuration. This new hardware version may also contain newly introduced parameters. Since in this case the USW30 system configuration will have no values for these newly introduced parameters, these parameters will be set to their default values.

The opposite case may arise with upwards-compatible channel units. Here the actual system contains a channel unit with an older hardware version, which may support fewer parameters. Parameters which could not be assigned will be ignored during the upload.

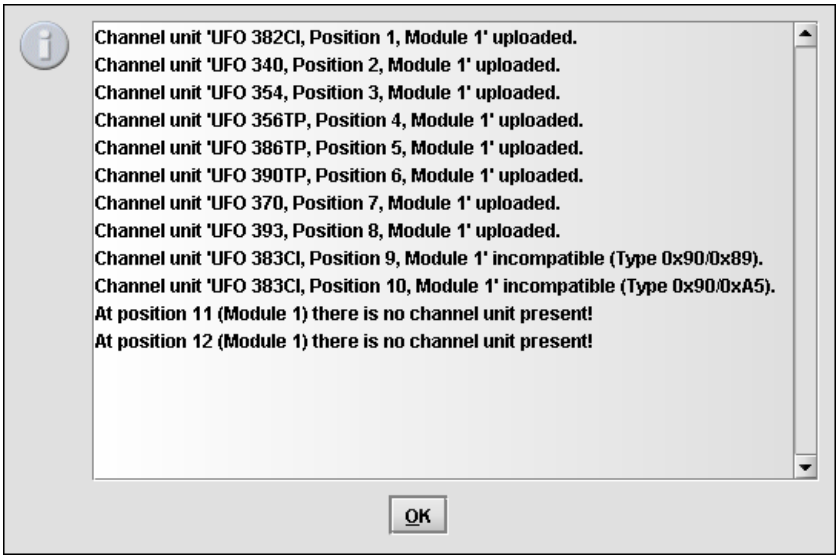

Channel unit 'UFO 382CI, Position 1, Module 1' uploaded.
Channel unit 'UFO 340, Position 2, Module 1' uploaded.
Channel unit 'UFO 354, Position 3, Module 1' uploaded.
Channel unit 'UFO 356TP, Position 4, Module 1' uploaded.
Channel unit 'UFO 386TP, Position 5, Module 1' uploaded.
Channel unit 'UFO 390TP, Position 6, Module 1' uploaded.
Channel unit 'UFO 370, Position 7, Module 1' uploaded.
Channel unit 'UFO 393, Position 8, Module 1' uploaded.
Channel unit 'UFO 383CI, Position 9, Module 1' incompatible (Type 0x90/0x89).
Channel unit 'UFO 383CI, Position 10, Module 1' incompatible (Type 0x90/0xA5).
At position 11 (Module 1) there is no channel unit present!
At position 12 (Module 1) there is no channel unit present!
OK

Figure 8.14: Information dialog for loading channel units

8.5 Importing an existing system configuration

Using the menu item (File | Import System) an existing system configuration can be imported into a configuration that had been read from a real system. The two configurations are combined. For each position in the existing base unit extension units, the following decisions are taken:

- If no channel unit is present in the imported configuration at this position, the channel unit from the real system is retained.
- If no channel unit is present in the real system at this position, the channel unit from the imported configuration is loaded.
- If in both configurations there is a channel unit is present at this position, the channel unit from the imported configuration is loaded, providing the two channel units are the same type. Otherwise the channel unit from the real system is retained.

The combined configuration can be loaded to the real system or can be saved as a file.

8.6 Closing a system connection

After you have performed all the settings you with on the UFO®*compact* system, close the connection using the menu item (File | Close) or by clicking on the corresponding symbol in the symbol bar.

9. Templates for UFO®*compact* system configurations

There are two different methods of configuring a UFO®*compact* system. You can configure an existing UFO®*compact* system directly (via modem or serial cable) (see Chapter 8. UFO®*compact* system read out, configure and send), or you can create a template which you can then load to several UFO®*compact* systems of the same type. It is easy to create a configuration for a UFO®*compact* system.

Please note that the USW30 Light Edition does not support the creation of templates.

9.1 Creating a template window

Using the menu item (System | Create Base unit), create the first window for your virtual UFO®*compact* system. Each UFO®*compact* system must have a base unit. Each further unit is called an extension unit and can be added using the menu item (System | Create extension unit). Up to 7 extension units can be added to each base unit.

Each extension unit added in this way is at first empty and can then be filled with channel units.

Note: *Take care to insert channel units into your template in the same way that the existing UFO®compact system will later appear. If the template and the real UFO®compact system do not match, your template cannot be loaded to the UFO®compact system.*

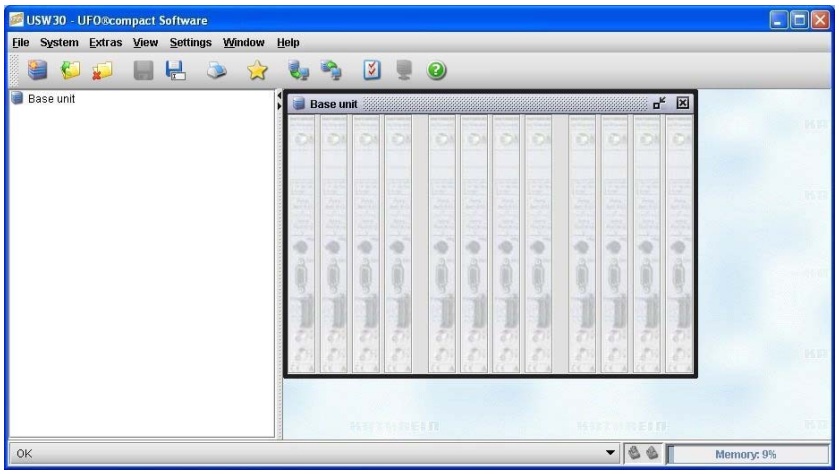


Figure 9.1: Empty base unit

9.2 Adding and removing channel units

Right mouse click on an empty position. In the pop-up menu that then appears, click on the menu item “New channel unit” and select the channel unit type. Now the channel unit can be set up and configured. In the same menu the functions “Delete channel unit” and “Channel unit characteristics” are available.

9. Templates for UFO®*compact* system configurations

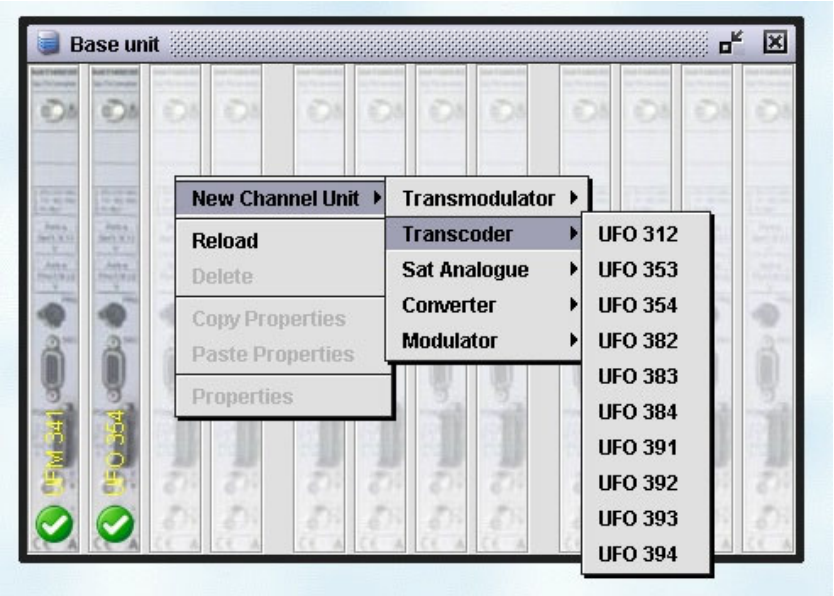


Figure 9.2: Adding a channel unit

Channel units that have already been added appear as a defined outline and have a green symbol at the bottom. Empty positions are shown as greyed-out outlines. For further information on the various colours of symbols see Chapter 6. Elements of the user interface.

9.3 Opening and importing saved system configurations

The configuration of a real or virtual system can be saved in a file for subsequent use. If the system configuration of a real system is opened, ensure that no values are exhibited by the elements of the user interface which pre-suppose a connection to the system. This applies particularly to the programme, language and sub-title lists for the transcoder channel units, but also to the displays of SNR, BER and lock status of many channel units.

Note: *To document the settings fort he programmes, languages and sub-titles for the transcoder channel units, we recommend a print-out of the system should be prepared, or a PDF export should be performed. This can be performed both with the real system and also with the newly opened file for the system configuration.*

When a file is imported, the system configuration in the file and the current configuration are merged. This is performed according to the following rules:

- If no channel unit is present at a system position in the imported file, the corresponding channel unit is the real system is left unchanged.
- If no channel unit is present at this position in the real system, the channel unit from the imported file is loaded. This applies even if the imported file contains more UFO®*compact* systems than are present in the real configuration.
- If a channel unit that is incompatible with the real system is present at a system position in the imported file, the real channel unit is left unchanged. (For compatibility of channel units see Chapter 8.4 Loading a configuration to a system.)

- Otherwise the current channel unit is superseded by the channel unit from the imported file.

If a real UFO®*compact* system is read in, importing a configuration file and the associated loading of data can allow the complete system to be set up in a very short time.

10. Creating a NIT

10.1 NIT wizard

Note:	*An NIT can be created only on a system configuration that has been read in. Note also that the plug connection instructions must be complied with to allow creation of an NIT (applies only to systems with UFO 386/TP channel units). In this connection, refer also to the user instructions for your TP channel unit.*

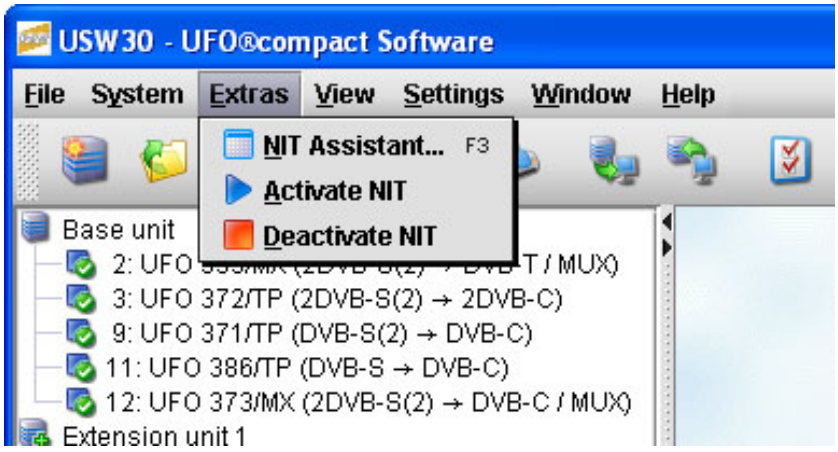


Figure 10.1: Menu for NIT

When the menu item "Tools" | " NIT Wizard" is selected, a wizard appears, which can be used to create the NIT. An NIT can, however, only be created when all the channel units provided for it are available and clicked into place.

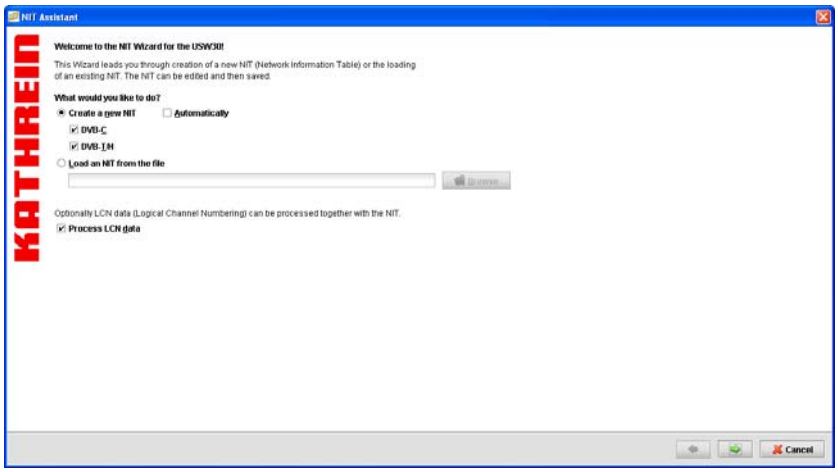

NIT Assistant
KATHREIN
Welcome to the NIT Wizard for the USW30!
This Wizard leads you through creation of a new NIT (Network Information Table) or the loading of an existing NIT. The NIT can be edited and then saved.
What would you like to do?
Create a new NIT
Automatically
DVB-C
DVB-T/H
Load an NIT from the file
Optionally LCN data (Logical Channel Numbering) can be processed together with the NIT.
Process LCN data
Cancel

Fig. 10.2: First page of NIT wizard

On the first page of the NIT wizard, you can decide whether you want to generate a new NIT or load an existing NIT from a file. During the generation you are asked to decide whether the NIT should be created for the DVB-C or DVB-T/H channel unit, or for both.Automatic NIT generation is available only if the USW 30 is connected to a system. In this case the NIT is created without any further user intervention. To load an NIT file, click the "Browse" button and select a file with the extension ".nit" in the file selection window.

10. Creating a NIT

Note: *If the NIT for a channel unit type is not created, the NIT settings in all the channel units affected remain unchanged. A user-defined NIT which has already been used is neither deleted now switch off.*

Since Version 3.6 of the USW 30 the capability also exists to process LCN data (Logical Channel Numbering). In this way information can be created about the preferred sequence for the services on the terminal devices, such as set-top boxes, that are connected.

Note: *Please note that the LCN function for some transmodulator channel units may require a firmware update. More details can be found on the service pages of the Kathrein homepage.*

Back:
Click this button to move back to the previous page (not available on every page of the wizard).

Continue:
By pressing this button you confirm your entries and move to the next page of the wizard.

Cancel:
The current action is canceled and the NIT wizard is closed immediately. Any data that has not been saved is lost (not available on every page of the wizard).

Finish:
The current action is performed and the NIT wizard is then closed (only available on the last page of the wizard).

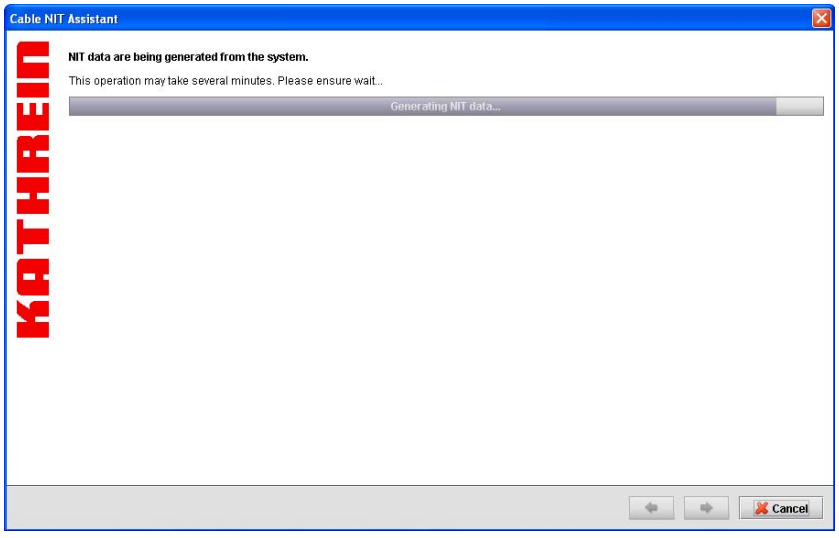

Cable NIT Assistant
KATHREIN
NIT data are being generated from the system.
This operation may take several minutes. Please ensure wait...
Generating NIT data...
Cancel

Fig. 10.3: Second page of NIT wizard – generating NIT

The second page of the NIT wizard is only visible if a new NIT is generated. The progress bar indicates the current phase of NIT generation. During generation, various tests are performed (these include tests for signal strength and plug connections).

10. Creating a NIT

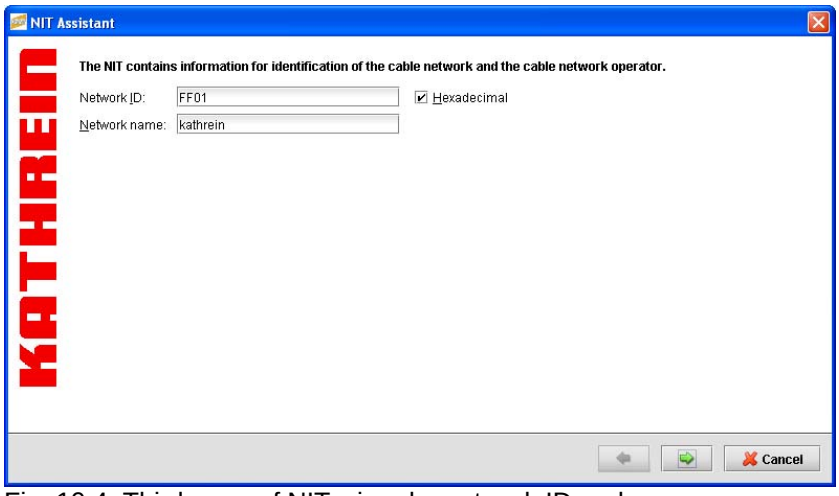


Fig. 10.4: Third page of NIT wizard – network ID and name

On the third page of the NIT wizard, you can change the network ID and network name. Each network is assigned its own network ID, which acts as a unique identifier for that network[1)]. The ID is a four-digit hexadecimal number, without any „0x“ prefix. The list of currently assigned network IDs can be found on DVB Project (**http://www.dvb.org/**)[2)]. Here are some selected examples:

Network ID	***Network***
0001	Astra Satellite Network 19,2°E
0002	Astra Satellite Network 28,2°E
0021	Hispasat Network 1
0030	Canal+ Satellite Network
2114	German Digital Terrestrial Television
F001	Deutsche Telekom
FF00 – FFFF	Private temporary use

The network name describes the physical network in a form that can be read by the end user[3)]. Examples: „ASTRA“, „EUTELSAT“, „Munich Cable“. It depends on the respective device whether this name is displayed by a DVB-C receiver.

1) Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems
2) Digital Video Broadcasting (DVB); Allocation of Service Information (SI) and Data Broadcasting Codes for Digital Video Broadcasting (DVB) systems
3) Digital Video Broadcasting (DVB); Guidelines on implementation and usage of Service Information (SI)

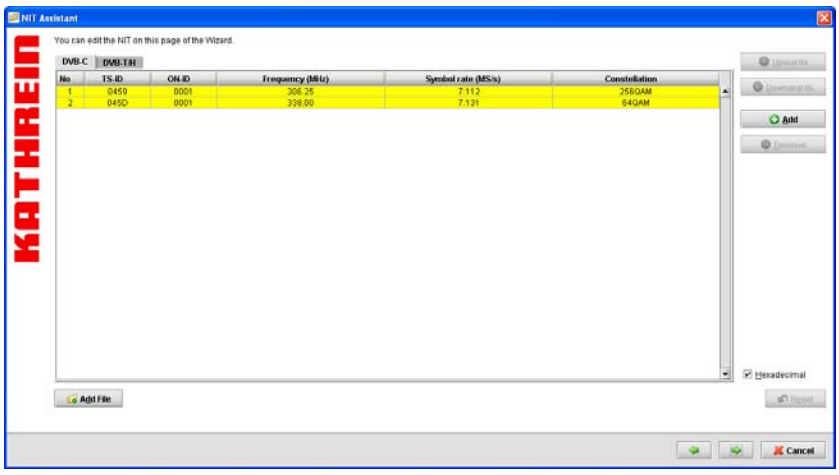


Fig. 10.5: Fourth page of NIT wizard – editing NIT

10. Creating a NIT

The fourth page of the wizard contains two tables which contain the NIT entries for the DVB-C and for the DVB-T/H channel units. The individual entries can be edited. To do this, double-click the cell to be edited with the left-hand mouse key. The changed values will be loaded when another cell is clicked or the Return key is pressed.

The values for the output frequency, the output symbol rate and the QAM stage were set in the respective channel units and loaded into the table. It is generally not advisable to change these values. On the other hand, the table must be edited if new entries are added to it. This may for instance be necessary if a head-end is a combination of different products, for instance UFO®*compact* and UFO®*plus*.

The ON-ID denotes the „Original Network ID“. This is comparable with the network ID for the NIT that is to be created, but always refers to the original network. The TS-ID denotes the „Transport Stream ID“, which ist he original ID of the transport stream. Each service can be uniquely identified using the path „ON-ID/TS-ID/Service ID“[3)]. The ON-ID and TS-ID are read by the channel unit transport stream. It is generally not advisable to change these values.

3) Digital Video Broadcasting (DVB); Guidelines on implementation and usage of Service Information (SI)

Manually entered values are subjected to only a limited check of their correctness. The respective user must use his best judgement regarding the validity of these values. In the “QAM” column only the values 16, 32, 64, 128 and 256 are valid (optionally followed by “qam” or “QAM”). Invalid entries are indicated with the word “Error”.

Important: If an error in the NIT table is not corrected, it will be loaded to the TP channel units when the NIT is loaded. No further checks are made!

Add:
Press this button to add new entries to the cable NIT.

Remove:
Press this button to remove the currently selected entry from the table.

File imort:
Pressing this button imports NIT entries from a file into the current table. For this, select a file with the ending “nit” in the file selection dialog.

Undo:
This button is active when changes have been made to the NIT table or LCN table. If the button is pressed, all manual changes are lost and the position is restored as it was when the channel units were read in.

10. Creating a NIT

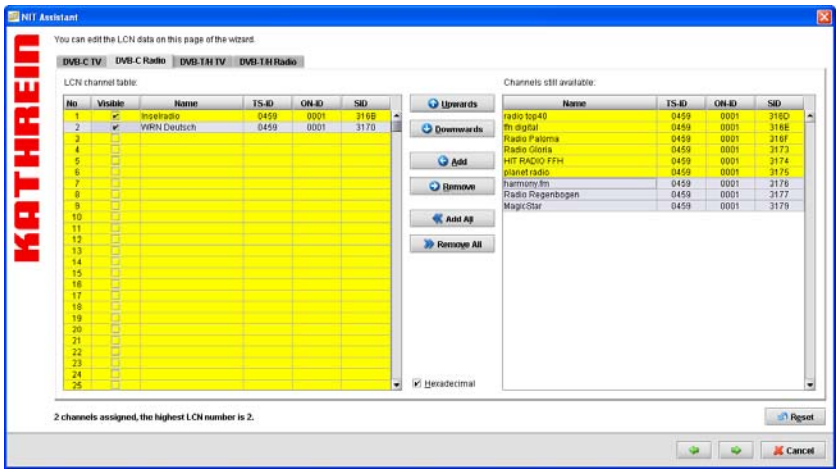


Fig. 10.6: Fifth page of the NIT wizard, editing the LCN data

The fifth page of the NIT wizard offers you the facility to edit the LCN data (Logical Channel Numbering). The page consists of four tabs (DVB-C/DVB-T and one each for TV/Radio), each of which contains 2 tables. In each case the left hand table shows the LCN entries that are currently assigned, and the right hand table shows the entries that are available. In each of the left hand tables there are 999 channel slots available, which can be assigned as you like (including any gaps). The entries can be sorted using the “Up” and “Down” buttons. There is also the facility to move an entry by inputting a number directly into the first column of the Table.

The “visible” switch determines whether a service is visible or is skipped when stepping through the range of channels at the terminal device. The service is still available by direct selection of the channel slot. Please note that not all terminal devices support the “visible” switch.

Up:
Moves the selected entries in the left hand table one lines upwards.

Down:
Moves the selected entries in the left hand table one line downwards.

Add:
All selected entries in the right hand table are moved to the left hand table. For this it is necessary to select at least one line in the left hand table, to indicate where the entries should be inserted.

Remove:
All selected entries in the left hand table are released, i.e. moved from the left hand into the right hand table.

Add all:
This button is active as soon as an entry is highlighted in the left-hand table, provided the right-hand table contains at least one entry. Pressing the button transfers all the entries from the right-hand table into the left-hand table where they replace the entry highlighted there.

Remove all:
This button is active as soon as the left-hand table contains at least one entry. Pressing the button removes all the entries from the left-hand table and inserts them into the right-hand table.

Reset:
This button is active when changes have been made to the NIT table or LCN table. If the button is pressed, all manual changes are lost and the position is restored as it was when the channel units were read in.

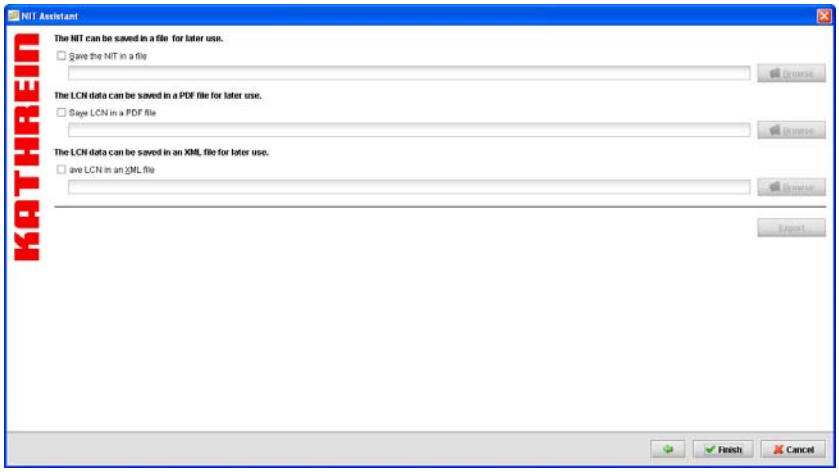

NIT Assistant
KATHREIN
The NIT can be saved in a file for later use.
Save the NIT in a file
The LCN data can be saved in a PDF file for later use.
Save LCN in a PDF file
The LCN data can be saved in an XML file for later use.
ave LCN in an XML file
Finish
Cancel

Fig. 10.7: Sixth page of the NIT wizard – saving the NIT/LCN data

On the sixth page of the NIT wizard the current NIT, including the LCN data, can be saved in a file (optionally). In this way an NIT can be created and edited, and reused as necessary at a later point in time. Transfer to a second structurally identical system can also be performed in this way.

In addition to this the LCN data can optionally be exported in a readable form (PDF) or in the form of a very simply structured XML file.

For selection of the file to be saved, press the respective “Search” button and use the file selection dialogue to enter the file to be generated.

Pressing the “Export” button saves the selected files in each case (if desired).

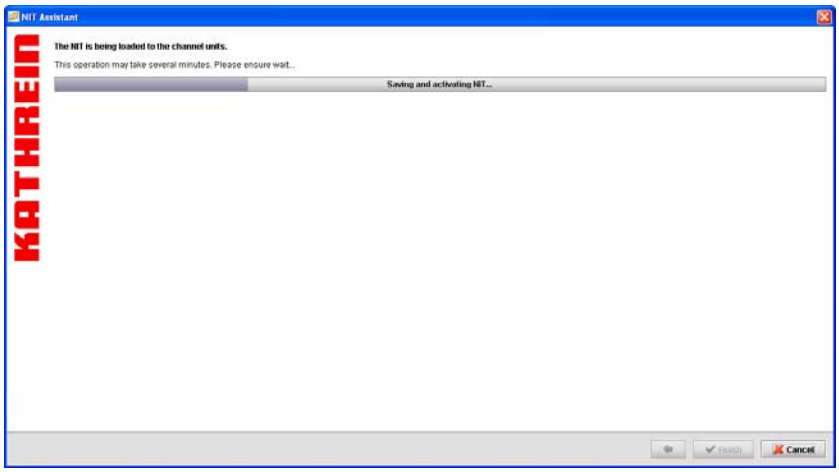

NIT Assistant
KATHREIN
The NIT is being loaded to the channel units.
This operation may take several minutes. Please ensure wait...
Saving and activating NIT...
Cancel

Fig. 10.8: Seventh page of NIT wizard – transferring the NIT

The seventh and last page of the NIT wizard is visible during the transfer of the NIT to the TP channel units. The progress bar gives information about the current phase of the transfer.

10. Creating a NIT

10.2 Importing external NIT data

The NIT wizard has the capability to open NIT files generated by the USW30 and to load them to the UFO®*compact* system. Other NIT data formats cannot be directly imported.

Example of a USW30 NIT file:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<nit xmlns="http://www.kathrein.de/xsd/nit" id="ff01" name="Network
Provider Name">
  <entry carrier="0" frequency="402.0" onid="1" port="1"
qam="64QAM" symbolrate="6.9" tsid="1201"/>
  <entry carrier="0" frequency="650.0" onid="133" port="3"
qam="256QAM" symbolrate="5.156" tsid="5"/>
  <entry carrier="0" frequency="658.0" onid="1" port="3"
qam="64QAM" symbolrate="6.111" tsid="1058"/>
  <entry carrier="0" frequency="482.0" onid="1" port="7"
qam="256QAM" symbolrate="6.9" tsid="1026"/>
  <entry carrier="0" frequency="306.0" onid="8468" port="10"
qam="64QAM" symbolrate="6.9" tsid="12801"/>
  <entry carrier="0" frequency="314.0" onid="8468" port="10"
qam="64QAM" symbolrate="7.15" tsid="13057"/>
  <entry carrier="-1" frequency="834.0" onid="10" port="-1"
qam="128QAM" symbolrate="6.9" tsid="10"/>
      </nit>
```

The USW30 NIT files are saved in XML format. There exists a schematic which defines an XML file. This schematic can be found in the installation directory:
<Installation directory for the USW30>/config/nit.xsd

Other NIT data formats must be converted into XML so that they satisfy the schematic listed for the USW30. As a rule it is necessary to modify the NIT data for export into the external application, or to create software which performs the conversion. If the external NIT data is already in an XML format, albeit a different structure, an XSL transformation can be created. In this case the standard XML tools can be used for transforming the data.

Further information:
http://en.wikipedia.org/wiki/Xml
http://w3.org/TR/xml/
http://en.wikipedia.org/wiki/XML_Schema
http://www.w3.org/TR/xmlschema-0/
http://en.wikipedia.org/wiki/XSL_Transformations
http://www.w3.org/TR/xslt20/

11. Favourites

Note: *The sole facility is to add UFO® compact systems connected via the UFX 314 to the Favourite list.*

11.1 Select from the Favourites

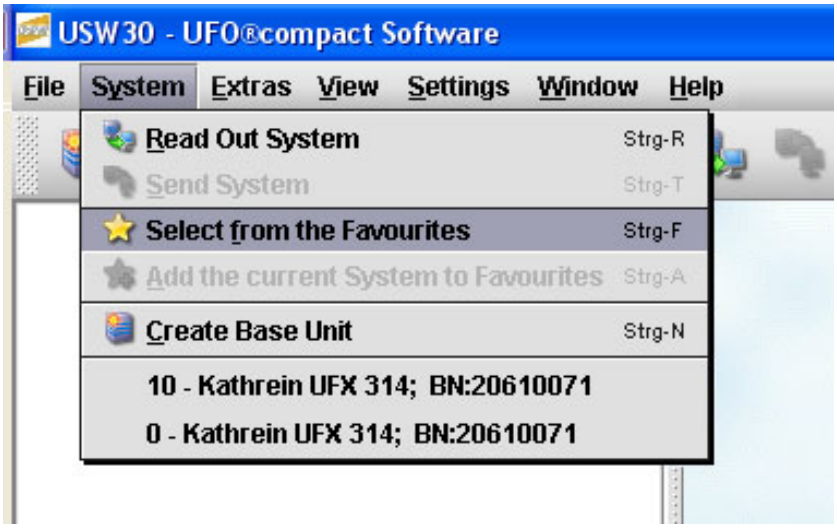


Fig. 11.1: „Select from the Favourites“ menu entry

The dialogue for managing the favourites can be called up from the menu (System | Select from the Favourites) or by pressing the relevant symbol in the symbol bar.
Any connection already established before this dialogue is opened will be closed.

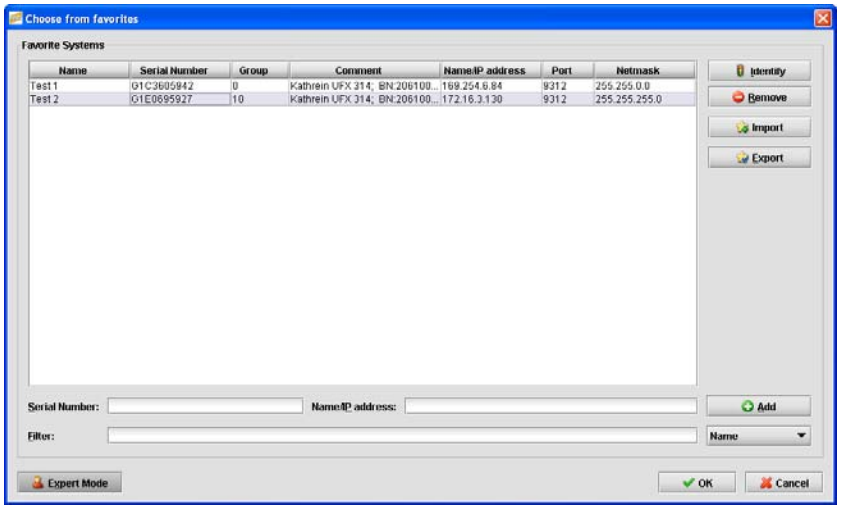


Fig. 11.2: Select from the favourites

This dialogue allows a UFO® *compact* system to be selected from the Favourite list and opened. This can be done by double clicking on the respective table entry or by selecting an entry and then confirming with „OK“.

11. Favourites

11.2 Add the current system to the favourites

It is very easy to add the currently open UFO®*compact* system to the Favourite list. To do this, simply select the menu item: (System | Add the current system to the Favourites).

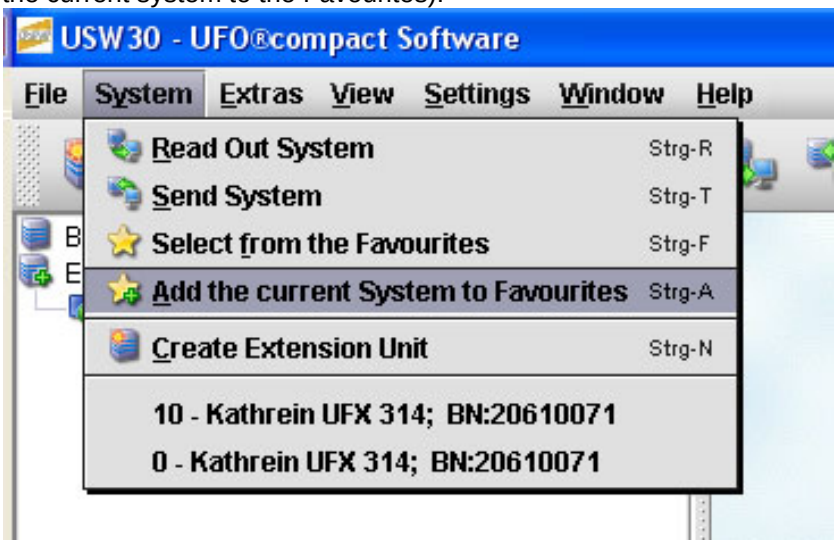


Fig 11.3: Add the current system to the favourites

11.3 Managing the favourites

The „Select from the Favourites“ dialogue offers a convenient way to manage the UFO®*compact* systems on the Favourite list.
As already described in Chapter 11.1 this dialogue can be opened from the menu (System | Select from the Favourites) or by pressing the relevant symbol in the symbol bar.

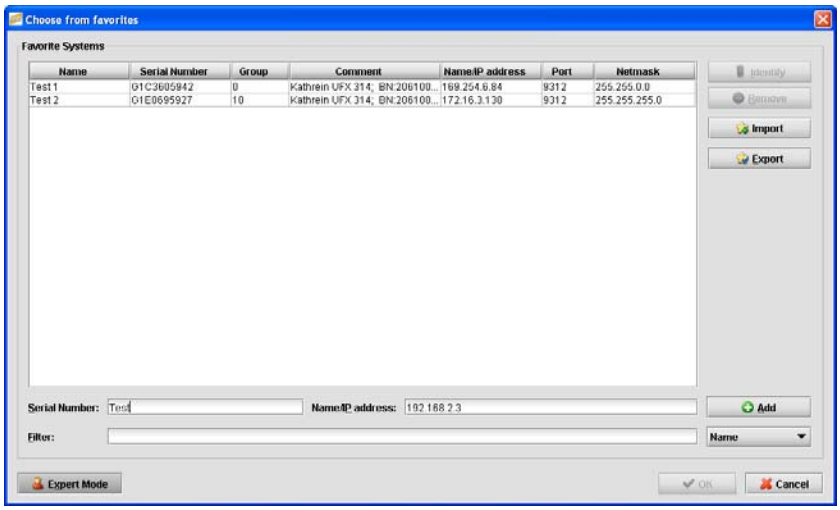


Fig 11.4: Dialogue for managing favourites

11. Favourites

The dialogue offers the following facilities for managing the favourites:

1. Open a UFO®*compact* system by selecting the respective favourite.
2. Export the current Favourite list in the form of a file.
3. Import an existing Favourite list from a file, with the facility to overwrite or add to an existing list.
4. Use column-based filters to find a specific favourite more quickly.
5. Add new favourites based on their serial number or the IP address.
   All further information is then determined automatically.
   Note: *The only those systems that can be added are those to which a connection can also be established.*
   If just the serial number is entered, the connection is established using the UDP protocol.
   If the IP address is entered, the connection is established using the TCP/IP protocol.
6. Removing a favourite from the list.
7. Identify a UFO®*compact* system on the Favourite list (the LED flashes).
8. Assign an individual name to a favourite by simply editing the „Name“ column.
   Note: *This name is not held in the UFO®compact system itself, but in the configuration file of the USW 30.*
   By this means the name is saved for use even when exporting the favourites.

12. Software Update

12.1 USW 30 software updates

The latest USW 30 software updates are available for downloading from the Kathrein homepage. The download page carries a detailed decription of how to install the update.

This allows you to update the USW 30 and also to update directly the satellite lists in the application.

(Tools | Search by program updates…)
(Tools | Search by updated satellite lists…)

You can check the version of the software you are currently using in the menu (Help | About).

12.2 Channel units

The latest versions of the channel unit plug-ins are available for downloading from the Kathrein homepage. The download page carries a detailed description of how to install the update.

It is however also possible that a new version of the USW 30 may be required for updating the plug-ins, so that the only course is to install a USW 30 update. This depends on the respective version.

To check the version of the channel unit plug-ins, open the menu (Help | About) and click on the “Plug-ins” tab.

12. Software Update

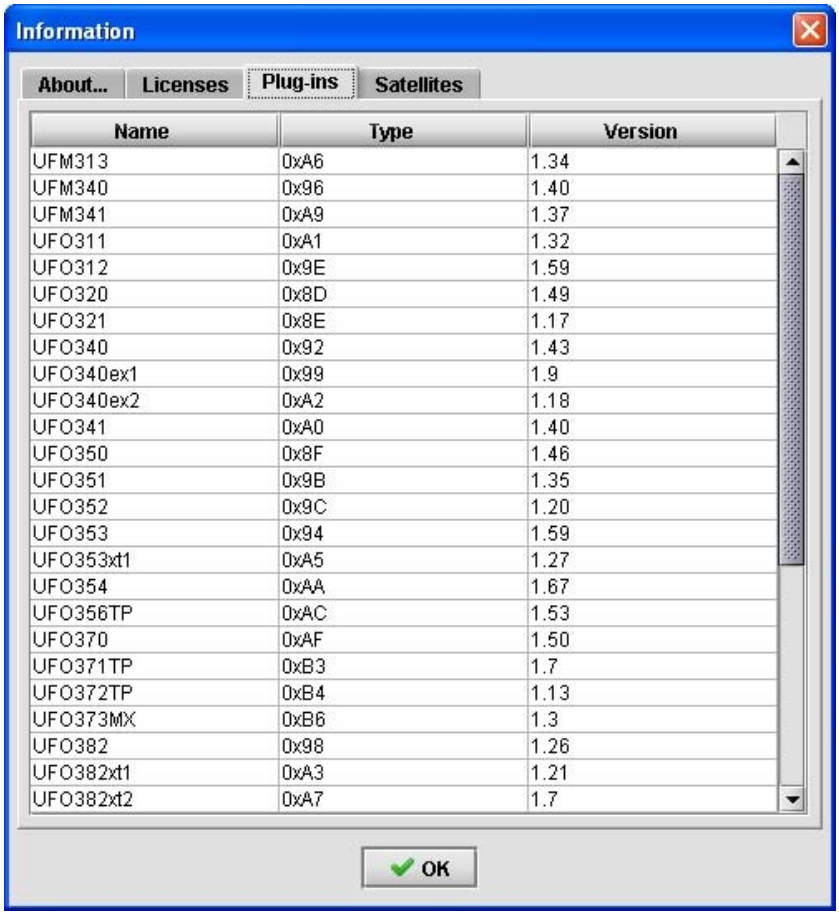


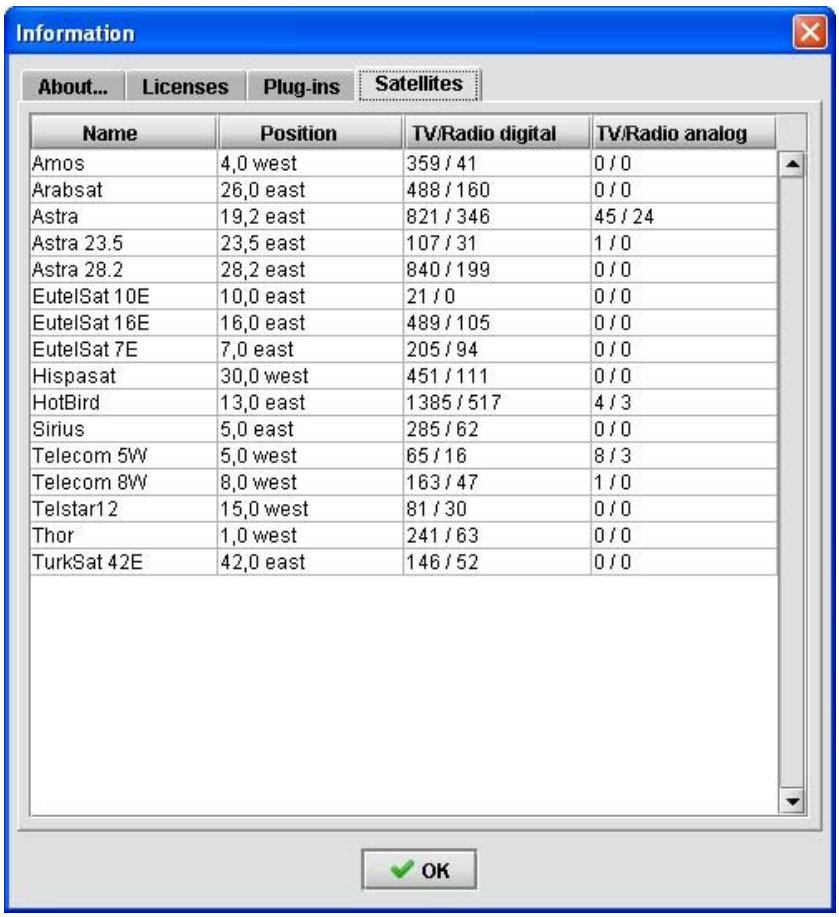
Figure 12.1: Listing all installed channel unit plug-ins

12. Software Update

12.3 Satellite lists

Updated satellite lists are included in every USW30 update, and are not separately available for downloading.

To check the satellites that are currently supported, open the menu (Help | About) and click on the “Satellites” tab.



Name	Position	TV/Radio digital	TV/Radio analog
Amos	4,0 west	359 / 41	0 / 0
Arabsat	26,0 east	488 / 160	0 / 0
Astra	19,2 east	821 / 346	45 / 24
Astra 23.5	23,5 east	107 / 31	1 / 0
Astra 28.2	28,2 east	840 / 199	0 / 0
EutelSat 10E	10,0 east	21 / 0	0 / 0
EutelSat 16E	16,0 east	489 / 105	0 / 0
EutelSat 7E	7,0 east	205 / 94	0 / 0
Hispasat	30,0 west	451 / 111	0 / 0
HotBird	13,0 east	1385 / 517	4 / 3
Sirius	5,0 east	285 / 62	0 / 0
Telecom 5W	5,0 west	65 / 16	8 / 3
Telecom 8W	8,0 west	163 / 47	1 / 0
Telstar12	15,0 west	81 / 30	0 / 0
Thor	1,0 west	241 / 63	0 / 0
TurkSat 42E	42,0 east	146 / 52	0 / 0

Figure 12.2: Listing the installed satellite lists

13. Archiving customer service information

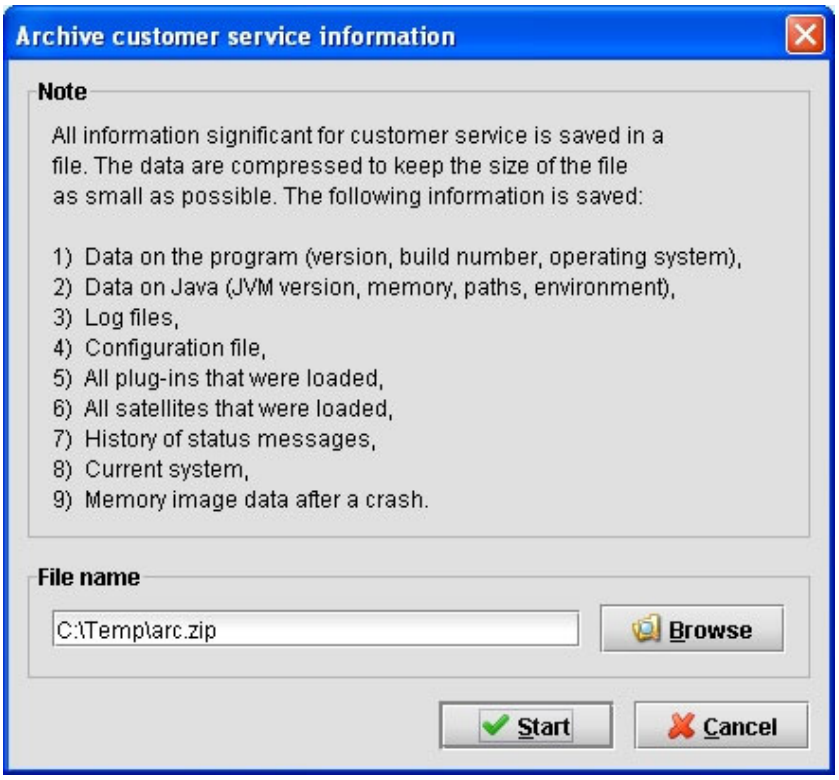

Archive customer service information
Note
All information significant for customer service is saved in a file. The data are compressed to keep the size of the file as small as possible. The following information is saved:
1) Data on the program (version, build number, operating system),
2) Data on Java (JVM version, memory, paths, environment),
3) Log files,
4) Configuration file,
5) All plug-ins that were loaded,
6) All satellites that were loaded,
7) History of status messages,
8) Current system,
9) Memory image data after a crash.
File name
C:\Temp\arc.zip
Browse
Start
Cancel

Figure 13.1: Dialog for archiving customer service information

To allow a quick response to customer service enquiries and fault reports, the customer service requires certain information regarding the installed software. For avoidance of unnecessary follow-up questions, the USW30 offers the facility to save all the relevant information in a single file. It is then sufficient simply to send this file to customer service by e-mail.

The following information is saved in the archive file:

- Data on the progam: version, build number, data, installation directory,
- Operating system: name, version, user directory,
- Data on Java: JVM version, memory, paths for classes and libraries,
- Configuration file for default values,
- List of plug-ins: name, type, version,
- List of satellites: name, date, type, ID,
- History of status reports,
- Log files,
- Current system,
- Memory image data after a crash.

The USW30 does not save any sort of security-relevant operating system data in the archive file. If you wish you can very easily check what data has been saved, since the archive is a normal ZIP file. (There are many programs that can unpack ZIP files. The archive contains exclusively text files.) Please refer to your system administrator if you need assistance in handling ZIP archives.

14. Error codes and possible causes

Error codes may be shown in the course of a USW30 error dialog. This chapter lists all error codes that may be shown and explains their possible causes. It also shows instructions on how to remedy the fault.

- E001 RX Timeout The channel unit has not received an answer within the expected time.

1. Possible causes
   - The connection to your UFO®*compact* system has been lost.
   - The channel unit is currently engaged and cannot answer.
   - The channel unit did not understand the command sent to it, and therefore did not answer.
   - The channel unit or the demultiplexer is defective.
2. What you can do to overcome the problem
   - Close the connection to your system and read the system in again.
   - Repeat your most recent operation.
   - If the fault persists, contact Kathrein Support.

- E002 TX Timeout A message could not be sent to a channel unit within a specified time.

1. Possible causes
   - The serial port on your computer is currently being used by other software.
2. What you can do to overcome the problem
   - Close the connection to your system. Then close all other programs that might also be using that port, and read your system again.
   - Repeat your most recent operation.
   - If the fault persists, contact Kathrein Support.

- E003 Wrong file format The file format from the channel unit was not what was expected.

1. Possible causes
   - The connection to your UFO®*compact* system is defective.
   - If this fault occurs after updating the firmware it is possible that the channel unit communication is defective.
   - The channel unit or the demultiplexer is defective.
2. What you can do to overcome the problem
   - Close the connection to your system and read the system in again.
   - If this fault occurs after updating the firmware, perform a reset on the channel unit (switch it off and on again) and read the system in again.
   - If the fault persists, contact Kathrein Support.

- E004 CRC data error The data from the channel unit are obviously defective.

1. Possible causes
   - The connection to your UFO®*compact* system is defective.

- If this fault occurs after updating the firmware it is possible that the channel unit communication is defective.
- The channel unit or the demultiplexer is defective.

2. What you can do to overcome the problem
   - Close the connection to your system and read the system in again.
   - If this fault occurs after updating the firmware, perform a reset on the channel unit (switch it off and on again) and read the system in again.
   - If the fault persists, contact Kathrein Support.

- E005 Buffer overflow More data were sent from the channel unit than could be processed.

1. Possible causes
   - The connection to your UFO®*compact* system is defective.
   - The channel unit or the demultiplexer is defective.

2. What you can do to overcome the problem
   - Close the connection to your system and read the system in again.
   - If the fault persists, contact Kathrein Support.

- E006 Channel unit system fault The channel unit is not answering or the system data in the channel unit are defective.

1. Possible causes
   - The connection to your UFO®*compact* system is defective.
   - If this fault occurs after updating the firmware it is possible that the channel unit communication is defective.
   - The respective plug-in has not been loaded to the channel unit.
   - A channel unit firmware update failed.
   - The channel unit or the demultiplexer is defective.

2. What you can do to overcome the problem
   - Close the connection to your system and read the system in again.
   - If this fault occurs after updating the firmware, perform a reset on the channel unit (switch it off and on again) and read the system in again.
   - Load the necessary channel unit plug-in to the system (see Chapter 11. Software updates).
   - If the fault persists, contact Kathrein Support.

15. Contractual object and rights of use

I. Contractual object, scope of the rights of use that are granted

(1) The object of the contract is the permanent licensing of the USW 30 application software and the associated program documentation (manual) together with rights of use of the same. The usage contract between KATHREIN-Werke KG and the purchaser is concluded on installation of the program by the purchaser.

Both the manual and the program are protected by copyright. The usage contract entitles the purchaser of the program package to use it within the scope defined below. All other uses are excluded. By installing the program the purchaser acknowledges this agreement, in particular in respect of usage, warranty and liability.

(2) KATHREIN-Werke KG grants the purchaser an indefinite non-exclusive right of usage for the software concerned.

(3) The right of usage is restricted to the following operations in the course of normal usage:

a) Installation of the software and the execution of security copies during the course of normal security measures within his company
b) Loading the software into the working memory and running it,
c) Necessary actions in the course of correcting any faults.

Apart from these actions the purchaser is subject to the provisions of copyright, which forbid any sort of changes, translations or copying of the respective software, even if only in part or only temporarily, irrespective of the type and media. Printing out the program code also constitutes unauthorised copying.

(4) Under § 69 d section 1 of the Copyright Act the purchaser may correct faults in the software and in this connection make necessary changes or copies, if

a) the features of the software differ from the description in the documentation or the software cannot fulfil the reasonably foreseeable tasks and
b) in addition the software runs defectively to a significant extent.

The purchaser must however inform KATHREIN-Werke KG in advance of the existence of such a fault. If KATHREIN-Werke KG rectifies the fault within a reasonable period, the purchaser is not entitled to take his own measures to overcome the fault. When rectifying a fault the purchaser must not make improvements to the software.

All changes that the customer makes must be documented and communicated to KATHREIN-Werke KG.

Transferring the program by downloading in any form is not permissible.

The purchaser must store the software in such a way that it is protected against access by unauthorised persons.

16. Warranty and other informations

I. Warranty

(1) For the agreed feature, the documentation is authoritative. Proper usage is defined as use in accordance with the functional description / product description.

For installing the software the installation manual printed in the documentation is exclusively authoritative. It is the purchaser's responsibility to provide the system requirements (hardware and other software) necessary for performing the installation.

(2) KATHREIN-Werke KG warrants that the program can be used by the purchaser as described in the program description as published and valid at the time of delivery to the purchaser. Minor restrictions in its usefulness are not covered by warranty. KATHREIN-Werke KG warrants further that the original program has been correctly recorded on a data carrier and tested.

To the extent that the purchaser places additional special demands on the software, there are no specific rights to remedies except as explicitly agreed as terms between the contractual parties. The purchaser bears exclusive responsibility for the selection, installation and use of the software, and for the achievement of the intended results from it.

(3) The purchaser is obliged to check the software immediately on receipt for any obvious faults, as far as can be reasonably detected. Any obvious faults discovered during this check should be notified to KATHREIN-Werke KG in writing immediately they are discovered and documented in a traceable fashion. If faults are not complained of immediately, the purchaser forfeits his right to make a claim under this warranty.

(4) In the event of a fault, the purchaser can request supply of equivalent new software free of the fault, and if that resupplied software is found to be defective the purchaser is entitled to cancel the contract or to pay a reduced price. In the case of cancellation of the contract the customer shall be liable to a reasonable charge for the use of the software up to the point of cancellation, calculated on a four-year straight-line depreciation basis.

(5) The purchaser forfeits his right to claim under warranty of he has made changes to the software or has allowed it to be changed by a third party, unless he can prove that the changes have not materially affected the analysis and processing applications provided by KATHREIN-Werke KG, and the fault complained of was present in the software when it was supplied.

16. Warranty and other informations

II. Liability

(1) If the software, due to the fault of KATHREIN-Werke KG as a result of omission or incorrect execution of proposals and advice given before or after conclusion of the contract or due to infraction of other obligations set by the purchaser, cannot be used as contractually intended, the above provisions under warranty and paragraph 2 below are applicable to the exclusion of further claims by the purchaser.

(2) KATHREIN-Werke KG accepts no liability on any legal basis for damages that have not occurred to anything other than the object supplied itself – except on grounds of deliberate intent, of gross negligence by its own agency or senior staff, of culpable injury to life, limb and health, of faults and other circumstances which have been maliciously concealed, or of failure to comply with explicitly agreed warranty terms.

(3) For culpable infraction of essential contractual duties KATHREIN-Werke KG accepts no liability even in the event of gross negligence by senior staff; and for minor negligence liability is here limited to reasonably foreseeable damages typical for this type of contract.

(4) Further claims by the purchaser, in particular for no-fault liability, are excluded; liability under the Product Liability Act remains unaffected.

III. Time limitation

The time limitation period for all claims by the purchaser – on whatsoever legal grounds – is one year after delivery of the software. This does not apply to liability under section II paragraph (2), where the statutory time limitation applies.

17. License texts of the libraries used

17.1 GNU LESSER GENERAL PUBLIC LICENSE (LGPL)

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

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This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.
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We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.
To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.
Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.
Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.
When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.
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936.2697/K/0911/ZWT - Subject to technical changes!